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THE

PRINCIPLES OF SURGERY,

Medical AS THEY RELATE TO Faculty

WOUNDS, ULCERS, AND FISTULAS;

ANEURISM AND WOUNDED ARTERIES; FRACTURES OF THE LIMBS; AND THE DUTIES OF THE MILITARY AND HOSPITAL SURGEON.

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A SYSTEM OF SURGICAL OPERATIONS,

CONTAINING

The Principles of Surgery,

AS THEY RELATE TO SURGICAL DISEASES AND OPERATIONS.

AND

A SERIES OF CASES,

CALCULATED TO ILLUSTRATE CHIEFLY THE DOCTRINE OF TUMOURS, AND OTHER IRREGULAR PARTS OF SURGERY;

And to instruct the Young Surgeon how to form his Prognostics, and to plan his Operations.

BY JOHN BELL, SURGEON.

IN THREE VOLUMES.

ILLUSTRATED BY ONE HUNDRED AND SIXTY PLATES.

VOL. III.

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1815.

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TO

SIR JOHN SINCLAIR, OF ULBSTER, BART.

PRESIDENT OF THE BOARD OF AGRICULTURE,

WHOSE PATRIOTISM HAS BEEN DISINTERESTED,
AND TRULY USEFUL TO HIS COUNTRY;
WHOSE NAME WILL BE LONG REMEMBERED WITH RESPECT,

THIS VOLUME IS PRESENTED
AS A TOKEN OF ESTEEM
FOR
HIS PUBLIC CHARACTER, AND PRIVATE VIRTUES,

BY

THE AUTHOR.

4182

I SHOULD think it very ungenerous and very ungrateful not to acknowledge, in this public manner, the Services of my Engraver, Mr. MITCHELL, who has done every juſtice to my Drawings;—executing ſome in a ſketchy manner, and others in a more laboured ſtyle; and with ſuch œconomy and expedition, and with ſuch perfect good humour in making every neceſſary change, or even cancelling a Plate, as to deſerve every way my Thanks.

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LECTURES

ON THE

SURGERY OF TUMORS.

ADDRESSED TO MY LATE PUPILS.

DISCOURSE I.

ON THE EXCELLENCY AND IMPORTANCE OF THIS DEPARTMENT OF SURGERY.

" Full gladly would he learn, and gladly teach."

CHAUCER'S PRIEST'S TALE.

THESE Lectures on the Surgery of Tumors, containing proofs of diligence and leſſons drawn from experience, are, of courſe, addreſſed to that Profeſſion whoſe eſteem I earneſtly covet, and ſhall always endeavour to deſerve;—but to you, my late Pupils, and ſtill, I hope, my beſt and moſt partial friends, I offer them as a laſting memorial of my gratitude and reſpect:—diligence and excellence in ſtudy will have their reward, and he who is conſcious of either may claim it with confidence; but reputation, when it does come, the beſt of all rewards, exceeds all proportion of merit; and it has ever appeared to me a juſt, a ſalutary, and a pleaſing ſource of gratitude to retrace this exceſs to the partial and kind regards of our early friends. —I have a thouſand motives for recollections of this nature. I have reſigned the higher duties of teaching to devote myſelf to practice, but I ſhall always remember with pleaſure the period when I was ſurrounded by young men, who ſhewed a high ſenſe of their future deſtination by continual diligence;—who delighted in ſtudy, and were grateful for inſtruction; and if I have a wiſh to renew that influence which I once held over their minds, it is, I am conſcious, for the beſt and moſt diſintereſted uſes.

This is a form of addreſs not uſual, yet not unnatural; it brings home to the mind many pleaſing recollections, which, willingly as you might be inclined to ſhare them with me, I ſhall not indulge, leſt I fall under the cenſure of thoſe who know not how ſincere my motives are, and cannot find in any form of addreſs that ſingleneſs of heart which they are unuſed to feel. Engaged in the duties of your profeſſion in various parts of the world, you will often remember the hours we ſpent together, not unprofitably; and will feel, wherever this may reach you, that it is a tribute of friendſhip, warm, ſincere, diſintereſted:—divided as we now are beyond the reach of mutual ſervices, or any interchange of ſentiments, there can be no uſe for flattery in this Addreſs. My purpoſe ſtill is to incite you to diligence;—to repreſent your profeſſion as requiring by its difficulties, and deſerving by its importance, your continual ſtudy;—to remind you how much is ſtill due to the improvement of your mind and talents, after the preliminary education of the ſchools is complete:—and, indeed, I muſt ever feel as if ſome duty remained unfulfilled, while the ſentiments of mutual regard, with which we often met and parted, are, on my part, unacknowledged; or, while that ſpirit of induſtry with which you began your career, is in danger of languiſhing under the fatigues of practice, unſupported by the advice of a friend. But whatever duty remains for me to perform will be beſt acquitted, whatever grateful recollections I may feel be beſt expreſſed, by directing you to a department of ſurgery which is, in a peculiar manner, the ſtudy of thoſe who are already engaged in ſcenes of practice, and which each of you, even in the moſt ſequeſtered and lonely ſtation, may be able to improve. You will, I doubt not, have a pleaſure in receiving at my hands a practical illuſtration of that diligence in practice which I have ſo often, ſo earneſtly enjoined you. Amidſt various avocations I have ſelected a ſubject of no ſlight importance, and never forgotten myſelf for one hour, nor relaxed, in any degree, my courſe of obſervation and ſtudy, till I now venture to preſent to you the fruits of my diligence in this form.

Whatever is anomalous in any ſcience, or lies out of the direct line of ſyſtem, is in danger of being little cultivated or valued; ſo it has been with the Surgery of Tumors. In elementary books you find no departments allotted to this ſubject; in the records of ſocieties or the works of learned collectors, you find no plain and homely caſes repreſenting the ordinary duties of the ſurgeon; nothing of the treatment of an abſceſs; the obliteration of a ſac; the anatomy of a tumor dangerouſly connected with the ſurrounding parts; not a grave conſultation on the

queſtion, whether a tumor of a given nature, or having peculiar connections with the great veſſels or nerves, may be ſafely extirpated: but narratives and drawings which ſtagger all belief, too wonderful to have any relation to practice, and proving nothing ſo much as the learned credulity or perſonal vanity of the narrator. Theſe repreſent not the difficulties you have to encounter in practice, nor are theſe the narratives by which your judgment is to be improved.

That learning which a young man begins with admiring, he ends with contemning. The falſe taſte in ſcience, in practical ſcience eſpecially moſt falſe, of heaping wonders upon wonders, and eſteeming nothing worthy of being narrated but what paſſes the bounds of Nature's wonted operations, has prevailed much and long.—This can never be any part of my ambition: neither ſhall I affect to tell with preciſion how a tumor ſhould be defined, whether as a part newly formed and not natural, or as the morbid increaſe and growth of ſome natural organ; nor ſhall I ſeek to arrange tumors with ſcholaſtic preciſion, according to their ſpecies and genera, filling up the outlines of a theory, or the gaps of a philoſophical ſyſtem, with inſipid reaſonings, or with tales extracted from books. My opinions on nutrition, ſound or morbid, and on the varieties produced in that function by the degrees and modifications of vaſcular action, I need not conceal, but ſhall never obtrude upon you; it will be eaſy while narrating facts, to inſinuate without illuſtrating ſuch opinions. The habits of my mind, and the courſe of my ſtudies, incline me to ſeek for uſeful facts; to ſtate them with preciſion and ſimplicity, as I have ſtudied them with diligence; to regard the leſſons they unfold only as they are precious to the young ſurgeon. To books then I make no appeal;—what I have ſeen and tried, what I know, that only ſhall I preſume to teach: in relating plain facts I muſt be occaſionally uſeful, and may confidently call for your attention, while exemplifying practical leſſons by living proofs.

It is, I am perſuaded, my firſt duty to diſplay the importance of this department of our ſcience, and to intereſt your ſympathy and reaſon in behalf of thoſe who are afflicted with tumors; of which, though ſome are harmleſs, far the greater number, by their cancerous or malignant nature, by oppreſſing the organs of breathing and ſwallowing, by deſtroying the bones or even affecting, (when ſeated on the head or in the noſtrils,) the functions of the brain itſelf, bring the patient, and that too in the vigour and prime of life, to an untimely grave. In each ſubdiviſion of our ſubject I ſhall have occaſion to lay before you examples of neglected and fatal tumors, of diſmal ſcenes which the ſurgeon did not dare to prevent; of opera-

tions raſhly begun, and abandoned in the very moment of execution; we need not ſeek for ſad and perſuaſive examples of ſuch danger to impreſs the importance of the ſubject upon our minds, nor ſtrive to recollect minutely the long-continued ſufferings of thoſe who have died of tumors. In our ſtreets and villages every paſſer-by is ſhocked with tumors expoſed with little regard to delicacy, loathſome to the ſight, and certainly fatal; and every ſurgeon muſt remember to have been engaged in melancholy and unavailing conſultations. The ſcenes we have witneſſed in Hoſpitals, or in private practice, return to the imagination from time to time accompanied with all their tragical circumſtances; we recollect the ſufferings of our patients, and we alſo remember that the moſt loathſome, painful, and, in the end, fatal tumors, were once trivial; we alſo know that thouſands at this preſent time are verging towards that hopeleſs deſperate ſtate from which even the moſt intrepid ſurgeon will not attempt their reſcue at the peril of his reputation and eternal peace of mind.

In a country where ſcrophulous diſeaſes prevail, no inquiry can be more important than that in which we are now engaged. Whatever diffidence I may entertain of my abilities to do juſtice to a ſubject, where neither reading nor reflection, nor anything but experience can much avail, I feel none in calling your attention to this department of ſurgery as by far the moſt important, and in claiming your aid: for the purpoſe of this Addreſs is not to proclaim my own diligence, but to excite yours; and to repreſent the Surgery of Tumors as a ſubject of perpetual ſtudy to thoſe engaged in practice. It is a department of the ſcience which requires to be taught in the form of particular leſſons, practical not ſpeculative; founded on actual obſervation; where caſes of various complexions tend to illuſtrate every variety of danger. The operations of lithotomy, trepan, and amputation are eaſily performed, and are performed in one unvaried way: they are alſo, though requiring no uncommon ſkill, reſerved for thoſe who have attained to high profeſſional fame. But tumors are the moſt frequent of all ſurgical diſeaſes; every ſurgeon muſt find this, the treatment of tumors, a part of his daily practice: a tumor, in whatever part of the body it is ſeated, requires an intimate acquaintance with the ſtructure of that part, and a clear recollection of all the precedents or rules which may ſerve either to direct the judgment, or to guide the hand. The ſurgeon ſhould know how to reſolve a tumor, or to excite it to ſuppuration; how to evacuate the matter, and obliterate the ſac; when to ſuffer the mild and harmleſs to grow, and how to extirpate at every riſk that which is prone

to ulceration or cancer. Every tumor is a ſubject of new and anxious conſultation, and every operation of this irregular nature, demands a knowledge of blood-veſſels and nerves not eaſily remembered, and perhaps no where truly deſcribed.

Need I remind you what torture a ſkilful ſurgeon may prevent, what misfortunes ignorance may cauſe? Every day we ſee the ſurgeon miſtaking blood for matter,—fleſh for bone, and tumors, malignant in their nature, for indolent and harmleſs ſwellings of the glands: by tormenting a ſimple tumor it may become malignant,—by neglecting a moveable tumor it may become fixed,—by allowing a ſmall and ſeemingly harmleſs tumor to grow, it may wax to ſo great a ſize, and acquire ſuch intimate connections with the more important veſſels and nerves as to defy all kind of ſurgery. A tumor of the jaws, the throat, or the noſtrils, of which the ſurgeon in its firſt beginning ſpeaks too lightly, grows in proceſs of time to ſuch a ſize that it compreſſes the throat, fills the paſſages of the noſtrils, and, by its growth and preſſure, renders the bones carious, and affects the brain. And thus it comes to paſs, that, when the patient returns after ſome months of abſence to crave advice, and ſtill more earneſtly than at firſt to intreat for help, his approaching death is manifeſt and inevitable.

Be aſſured that the talents for this department of practice are not to be learned at colleges and ſchools: that the irregular parts of the ſcience, and eſpecially the right treatment of tumors, the diſtinguiſhing their character and natures, predicting their growth and conſequences, or performing the operations which tumors, dangerous either by their place or nature, require, are not to be learned by experience, and are to be the ſtudy of your life. Every day and every hour you ſhould improve in this kind of knowledge, and ſhould aſpire at a degree of excellence not to be obtained from the leſſons of any teacher, for, be aſſured, no maſter can fix the principles of ſcience, nor anticipate the aſpect and peculiar character of each caſe, and leſſons of diſappointment and ſcenes of diſtreſs in which you have had a perſonal reſponſibility, make deep and laſting impreſſions. I ſolemnly call upon you for the exerciſe of that unwearied and conſtant diligence which you owe to a profeſſion, which, in every important act, affects the life or happineſs of a fellow-creature, and which is eſpecially required in regard to thoſe irregular parts of the ſcience, which are ſo little impoſing, and yet are the moſt important. Let no fair occaſion paſs of inquiring into the hiſtory of monſtrous growths, and ſpeculating on thoſe prodigies of nature, even when it is not in your power to cure or alleviate the diſeaſe;—diſregard no tumor becauſe it ſeems harmleſs, for never is ſuch a diſeaſe more dan-

gerous than when the patient is diſmiſſed with ſome trivial preſcription, and referred with dark and doubtful prediction to " the coming on of time." Allow no poor petitioner for your advice to depart without ſome ſhare of notice, for the tumor which he hides under his ſide-lock or cravat is, perhaps, at no diſtant period, to cauſe his death: never, unleſs for ſpecial reaſons in conſultation or otherwiſe aſſigned, ſuffer a tumor to grow uncontrolled, unleſs it be ſeated merely in the ſkin, or under the ſkin, for in every other part of the body it endangers life.

From thoſe advices which I confidently lay before you, ſuffer me to decline into other reflections more perſonal to yourſelves, and more connected with your reputatiou and intereſts. Unleſs you are careful in marking the characters of tumors, you will never improve in knowledge or conduct: ſo tranſient are the apprehenſions the ſurgeon feels, when called from time to time to examine a trivial tumor, ſo deeply impreſſive the ſcene, when that once trivial tumor brings the patient into deſpair and danger, that no one is juſtified in neglecting this department of ſtudy, nor ſhould his heart be at eaſe who fails, whatever the extent or hardſhips of his practice, to record for his own private inſtruction at leaſt, if not for the general uſe, whatever remarkable inſtances he meets with of diſappointment or ſucceſs. A ſurgeon, though doomed to paſs his life in the moſt deſolate and dreary ſituation, whether among ſlaves in our ſettlements abroad, or among peaſants and country-people at home, cannot be without frequent occaſions, if he know but how to uſe them wiſely, of improving his own talents and inſtructing others; and in thoſe who move in the higher and more diſtinguiſhed ranks of our profeſſion, it is becoming to reſerve from its gainful occupations time to reflect upon its moſt eſſential duties, and to improve that ſcience from which ſuch diſtinction is derived. Be careful then in compoſing the memorials of your private practice; though they ſhould not be deſtined ever to paſs from your own repoſitories, they will not be without their uſe. The habit of writing and thinking; of taking yourſelf ſeverely to account for whatever errors you commit, will improve your ſkill and beget a juſt confidence in your own judgment.

It is by a ſort of compulſion that you are made to ſtudy in colleges and in books whatever thoſe who have gone before you have ſeen and related; but when come to man's eſtate and called to the practice of your profeſſion, it would be diſgraceful not to feel that zeal and ſympathy which you ever muſt affect, not to ſtudy the diſeaſes entruſted to your care, which are by that circumſtance alone more inſtructive, and by their eſſential nature more truly intereſting, than the extravagant tales

you once delighted to read. If you ſtudy your profeſſion in each ſucceſſive act of it, you grow at once in reputation and in knowledge. Your habits need not be blazoned, they will not paſs unnoticed. The diligence, and good faith, and conſtancy of mind, which ſuch conduct implies, will endear you to your friends, and be uſeful to ſave your fellow-creatures.

Be aſſured alſo, that theſe are duties you cannot at pleaſure decline: no ignorance nor miſtakes of former ſurgeons, conſulted before you, perhaps in preference to you;—no improvident delays, nor provoking timidity, on the part of your patient; no contempt or neglect of former good advice, can abſolve you from your high profeſſional duties: nor muſt you ever admit an unmanly fear of your reputation being involved in your patient's fate; but, when the patient is in danger of ſuffocation, when he bleeds to death, you muſt not, you dare not refuſe your help. The patient, in the laſt and fatal ſtage of a tumor, ſpeaks of deſpair, but never feels it; ſtill he looks to you for help, deſires operations only when ſuch reſources can no longer be thought of, and ſtruggles for life like a ſpent ſwimmer to the laſt moment. Thence it is the univerſal intereſt of the profeſſion, that patients ſhould have timely warning of their danger; that every individual who aſſumes the rank and name of ſurgeon, ſhould be qualified for every duty; that timely and ſucceſsful operations ſhould be more frequently known and rumoured abroad; for, in proportion as ſurgeons become more dextrous and ſkilful, the confidence of thoſe afflicted with ſuch diſeaſes will increaſe.

I have perhaps reaſon to ſuſpect the opinion I have conceived of the importance of a ſubject, which, from long contemplating it in its various relations, has made an impreſſion on my mind which gains ſtrength while I endeavour to infuſe it into yours; to an author, his favourite theme, his preſent theme, ſeems ever important. The ſurgeon, no doubt, when he proclaims the importance of a favourite ſubject, is bound in a peculiar manner to prove it in detail,—to prove it by facts; yet I know not why he ſhould be debarred the common privilege of explaining without a pointed reference to facts, whence the general impreſſions he has received have taken their riſe: he moſt of all may be pardoned an overweening love of his profeſſion, who ſees it daily a ſource of relief from pain, from danger, and from death inevitable, but for his interpoſition: he may be acquitted of any affectation of extraordinary ſympathy and feeling, who has been called at all hours and ſeaſons, from his bed, his table, his family, to witneſs the agonies of a friend ſuffocating from the bulk of a tumor,—alarmed with hemorrhagies which threaten life, or

waſting under the cruel pains of cancer. Can the ſurgeon be accuſed of affected ſenſibility, who deſcribes with intereſt ſcenes in which he has ſo great a ſhare, ſo far different from that even of the neareſt friend, ſo much the more reſponſible? He alone ſees all the variety of miſery, the leaſt part of which, if witneſſed by common ſpectators, is related in affecting terms; he alone knows the trivial beginnings and ſad concluſions of diſeaſes, and can form a true eſtimate of their importance. The ſurgeon, in repreſenting the intereſt which particular diſeaſes ſhould excite, deals not in the fantaſtic horrors which the moraliſt conjures up when he declaims againſt the vices of a declining age, or the politician, when the iniquity of public meaſures is his theme, and he predicts the ruin of his country: the ſurgeon's mind is occupied with diſtinct impreſſive recollections of what individuals have ſuffered; though ſteeped in the colour of his trade, inured to blood, he may be allowed to feel every degree of ſympathy with ſcenes of diſtreſs, preſented to his imagination in ſuch various and afflicting forms.

Believe me, Gentlemen, I uſe no art to engage you in this department of ſtudy, and do not ſeek by exaggeration to enhance its importance: what I think and feel, I muſt, in juſtice to you, ſpeak freely, and without reſtraint; and ſurely no way can be ſo faultleſs as to lay before you a ſlight and preliminary ſketch of the chief ſubjects of this volume, i. e. of the various parts ſubject to tumors, and the various conſequences of their growth, as they affect the ſkin, the glands, the bones, the eye, the breaſt, the teſticle, the throat, the rectum, or other hollow paſſages of the body, ruining by preſſure and ulceration, the ſtructure of the affected, and the adjacent parts. This general prognoſis I am ſure I ſhall effectually impreſs upon your memory, "That every tumor is deſtined to grow more or leſs rapidly, till it deſtroy the adjacent bones, entangle the great veſſels and nerves, compreſs the throat, and finally, by ſuffocation, ulceration, hemorrhagy, or hectic, bring the patient to his grave." This we know but too ſurely, for an unnatural growth once formed, each arterial pulſation that adminiſters nouriſhment to the natural body, augments its growth.

The SKIN is the part of the body perhaps the moſt vaſcular and delicate, and is often by injuries, as by the pulling off the hair, or the pinching or bruiſing of its veſſels ſo excited, that its veſſels taking on a lively action, its arteries and veins are in proceſs of time dilated, and form aneuriſms, or bleeding tumors; or they are merely by ſuch excitement ſo quickened in their ordinary function of nutrition, that the whole web of integuments becomes a tumor, retains its natural form

and ſubſtance, with only ſome ſlight enlargement of its pores and papillæ, but becomes ſo voluminous as to be wrapped round the body, forming thus the moſt extraordinary tumors which are ſtill nothing but ſkin.

The BONES, as vaſcular as the ſofter parts, and perhaps more regularly and unceaſingly abſorbed and replaced, form, when they are injured, the moſt bulky, and, from their ſolid texture, the moſt permanent tumors, which, when they turn to ulceration and caries, are the moſt incurable and fatal. We very frequently obſerve a tumor of a bone to follow a blow, and, when the blow and the ſwelling take place near a joint, when the knee, the wriſt, the ſhoulder, or the ancle are involved in the tumor, its growth is extremely rapid. Often I have ſeen the radius, when the wriſt has been fractured and ill reunited, form an enormous bony tumor; or the heads of the tibia and fibula ſwell out in conſequence of a bruiſe into a tumor cavernous and griſtly, partly occupied with matter and partly formed of a ſolid increaſe of bone, till the thigh almoſt equalled the body in thickneſs. Very often ſuch tumors burſting pour out the moſt fœtid matter; and large bony cavities, or numerous honey-comb-like cells are formed. Often too without external violence, without any conſpicuous marks of a ſcrophulous habit, without any poſſible relation to venereal diſeaſes; the bones univerſally are diſpoſed to form tumors, by which ſometimes the hands are deformed, the wriſts ſwelled, the fingers crooked like birds' talons, and ſometimes the long bones, as the thigh-bones, ſhoulder-bones, ribs or ſcapulas, are ſtudded with large knobs or grow out in tumors. Theſe are diſeaſes ſtill more diſmal, quite irremediable.

The GLANDS, when their veſſels are excited by blows, by cold, by the abſorption of foul and virulent matter, are enlarged beyond all credible limits, and draw the adjacent parts into diſeaſe, inſomuch that the tumor which originally was a ſimple gland has, in the end, a very anomalous aſpect, and conveys ſuch confuſed impreſſions to the feel, that we know not how to pronounce upon its nature, which only the hiſtory of the tumor can in any degree elucidate. Theſe are the tumors which, when ſeated either within the mouth, or at the angle of the jaws, repreſs the tongue, diſplace the trachea, or obſtruct the free paſſage of the food and air, and connect themſelves ſo with the branches of the carotid arteries, that the hand of the moſt intrepid ſurgeon can no longer avail, and wiſe and prudent men, met in conſultation, ſhrink from thoſe duties which the patient's manifeſt danger plainly impoſes, leſt they ſhould bring not themſelves only but their profeſſion into diſgrace.

The EYE, a part at once exquiſitely ſenſible, and exquiſitely vaſcular, and conſiſting of humors which are perhaps more than any other parts of the body in a ſtate of continual circulation, being continually ſecreted and reabſorbed, grows by the ſlighteſt exceſs of vaſcular action into a tumor. Sometimes the ſecretion of aqueous humor, not changed, but merely augmented, diſtends the globe of the eye into a tumor continually increaſing, till firſt viſion is deranged, (not deſtroyed,) next head-aches enſue, and, finally, the coats of the eye give way. On other occaſions the adnata, or looſe and vaſcular coat of the eye, ariſing from the inner ſurface of the eyelids and connecting it with the ſkin, is ſo ſwelled by inflammation, that its cellular ſubſtance being of a ſpongy nature, the tumor of it covers and involves the whole eye, conceals the eye-ball, protrudes far beyond the eyelids red, fleſhy-like, and often ulcerated, ſo as to ſeem in the haſty opinion of ignorant ſurgeons a cancer of the eye: even for ſuch a diſeaſe, ſo little connected with the globe of the eye, or allied with cancer, have I known the whole eye-ball extirpated. Sometimes the deeper parts of the eye are ſo inflamed as to terminate in ſuppuration of the globe, after delirium and dreadful pains; then the central parts having ſuppurated, the firm coats of the eye at laſt ulcerate, the globe burſts, the eye ſubſides into its ſocket, and the eyelids cloſe upon what remains of its coats: but theſe, thickened by continual inflammation, harden and grow into a new and more formidable tumor; and the eye protrudes again from its ſocket, of a ſchirrous hardneſs, with a painful and burning ulceration. Sometimes from a ſuppuration leſs deep or extenſive, where not the vitreous humor or whole body of the eye, but only the cornea and the iris, the moſt delicate and vaſcular part of the eye, are diſeaſed, the eye becomes cancerous; for when, after a partial ſuppuration and ulceration of the eye, the iris very often throws out a fungus, bearing the true character of cancer, even from the firſt, or becoming ſo by the excoriation of the tears, and the friction of the eyelids. The lachrymal gland ſeated within the ſocket is often, as I ſhall have occaſion to explain by examples, a cauſe of incurable diſeaſe, and the ſmall glands or lacunæ of the tarſus, or cartilaginous borders of the eyelids, form tumors extremely firm and unalterable in their nature, ſometimes indeed ſtationary, but never reſolving under any courſe of treatment, and often cauſing ſuch pain and inflammation of the eye as to require extirpation. All the parts, in ſhort, of this delicate organ, whether proper or merely adjacent, are ſubject to tumors more frequently cancerous than mild.

The BREAST is a gland deſtined to perform a ſecretion more profuſe and rapid,

in proportion to its ſize, than even that of the ſalivary glands, and more elaborate. It is ſubject to great periodical excitements; at each menſtrual period it ſwells ſlightly, is greatly enlarged by pregnancy and ſuckling, and in warm climates, or diſeaſed conſtitutions, in all countries, it is the part firſt and moſt conſpicuouſly enlarged. The period of life at which menſtruation ceaſes is ſo critical for this gland, that it then falls into ſcrophulous and cancerous diſeaſes, having every variety of aſpect. Sometimes the whole breaſt is indurated and enlarged, with a ſwelling ſo truly ſcrophulous, that I have ſeen the breaſt ſuppurate, burſt out like other ſcrophulous glands, heal at one point and ulcerate in another, become indurated to an extreme degree, and pour out from various openings a limpid ſerum in profuſion, proportioned to the natural ſecretion of the gland. Often there take place, both in women who give milk and in thoſe more advanced in years, a voluminous abſceſs, which is both formed ſo ſlowly, and lies deep involved in ſo thick a maſs of indurated gland, and ſo void of pain, that it is diſtinctly marked as a ſcrophulous diſeaſe. In both the affections of the mamma here deſcribed, though as far removed from ſchirrus, as ſcrophulous ſwelling of the teſticle from cancer of that part, I have ſeen the breaſt amputated with circumſtances of particular cruelty. From ſcrophulous inflammation, blows, milk fever, or, in conſequence of that indeſcribable change which takes place at the ceaſing of menſtruation, the gland of the breaſt is hardened, either in one maſs or in ſeparate kernels, which, however long they may remain indolent, become ſooner or later inflamed, and then the proper gland of the breaſt, the lymphatic glands connected with it, the ſkin, and cellular ſubſtance, even the pectoral muſcle itſelf, are apt to be maſſed together into one hard globular and ponderous tumor, with ſeparate glandular tumors interſperſed in the ſurrounding cellular ſubſtance. When this maſs ulcerates, the axillary glands, previouſly indurated, alſo inflame; the ſkin of the axilla reddens, as that of the breaſt ulcerates; the whole armpit ſwells, the arm becomes œdematous, and lies powerleſs; and the patient dies in a moſt loathſome ſtate, with foul and very fœtid matter running from the ſore in great profuſion, ſo as to make the laſt offices of friends difficult to perform. Sometimes this diſeaſe begins like a kernel in the center of the gland, ſometimes like an excoriation of the nipple, ſometimes like a mere contraction and induration of the ſkin, not beginning invariably round the nipple, but extending, as I have ſeveral times remarked, from the axilla downwards, ſo as to affect the breaſt. Thus a careful obſerver ſees in the courſe of practice a ſad variety of diſeaſe in this part, according with the various ſtructure of thoſe parts in

which the diſeaſe begins, or the ſpecies of the malady, whether varicoſe, ſcrophulous, or cancerous; varieties which, ſimple as the part ſeems to be, are as widely different from each other, as venereal, ſcrophulous, or ſimple inflammatory affections of the eye are from one another, or affections of the cornea from thoſe of the humors.

The TESTICLE is a part ſubject, like the eye and breaſt, to cancerous affections, often commencing in venereal inflammation, affecting the ſtructure of the gland, or ariſing from blows or falls, complicated almoſt always with a watery tumor of the tunica vaginalis, and indurations of the ſpermatic cord. Theſe diſeaſes, too often concealed even from the ſurgeon, arrive at their laſt ſtage undivulged: but the ſcene is dreadful indeed when either before operation the teſticle burſts out into open ulcer, or, after an operation performed too late, the cord, being diſeaſed, protrudes from the upper angle of the wound in the form of a fungus or cauliflower-like tumor, which it is in vain to extirpate with either ligature or knife, for it ſhoots out again in a day, bleeds, and diſcharges the moſt fœtid ſanies, accompanied with cruel pains of which the patient expires.

The MEMBRANES LINING the NOSTRILS are of ſo vaſcular and glandular a nature, ſo continually expoſed to the air, and yet ſo delicate and ſenſitive, that tumors ariſe even from the very ſlighteſt irritation. Theſe tumors, mild perhaps in their own nature, are dreadful in their conſequences, from being ſeated in narrow paſſages, limited not by dilatable membranes, but by unyielding bones, which ſuffer every kind of diſorder when the paſſages begin to be filled with even the ſofteſt of theſe tumors, while the cavities of the antrum Highmorianum, and other cells far out of the reach of inſtruments, are often occupied by tumors of a more malignant nature. So deſtructive are the conſequences of even the mildeſt tumor, growing and diſtending theſe paſſages, that we know not how to admit or refuſe that definition of tumor ſo often mentioned in books, "The CANCEROUS POLYPUS;" for no cancer can be more deſtructive than even the moſt ſimple polypus. Little does the patient apprehend the fate that awaits him, when a ſmall tumor, which he can juſt touch with the point of the finger, ſoft, pendulous, void of pain, and attended with no worſe diſorder than ſneezing and watering of the eyes, firſt appears: it is not that ſlight ſenſe of ſuffocation which firſt alarms him, increaſing to a total obſtruction, that occaſions his death; but the narrowneſs and crookedneſs of the paſſages of the noſtrils and throat, and the vicinity of thoſe parts to the brain, ſeparated indeed only by the thin plate of the æthmoid bone that occaſions death. The bones

firſt become ſoft and carious, and diſcharge a fœtid and acrid matter, which diſtils in ſuch profuſion as to excoriate the lip, and to cauſe diarrhæa by running down the noſtrils and throat. The blood burſts impetuouſly from the corroded veſſels from time to time: the hearing is entirely interrupted by the preſſure of the tumor, on the mouths of the Euſtachian tubes: the teeth fall out from the ſockets, in conſequence of the caries of the alveolar proceſſes: the head ſeems rending aſunder with diſtracting and continual pains: uſually the patient is exhauſted by long ſuffering, and frequent loſs of blood: ſometimes he lives till caries of the æthmoid bone admits the ulceration to the brain, and he dies lethargic.

The GUMS, when they fall into a diſeaſed condition, hard as they are, (and their hardneſs approaches more nearly to the conſiſtence of the teeth and jaw-bones, which they connect together, than to that of fleſh,) throw out tumors ſo luxuriant, ſo truly fungous, ſo profuſely ſupplied with blood, that the hemorrhagies from them are, even from the firſt, alarming, and are in the end fatal; and the tumors, when extirpated with the ſcalpel, or torn away with ruder inſtruments, often ſprout up (after the very bones have been laid naked,) in the ſpace of twenty-four hours, and effloreſce in the courſe of a few days into cauliflower-like excreſcences, and ſtill grow ſo rapidly, accompanied with diſlocation of the teeth and caries of the jaw, that the patient expires of hæmorrhagy, diarrhæa, and cancerous pain. There is no form of tumor I ſo greatly dread, none ſo rapid in its growth, as thoſe proceeding from theſe callous gums, nor any diſeaſe in conſequence of which I have ſuffered ſuch ſevere, unlooked-for diſappointments, or ſeen ſuch unſucceſsful operations and horrible deaths. Sometimes the extirpation is ſucceſsful, and, I think, I can often predict when it will be ſo; but, when it fails, no cauterizing, nor the moſt cruel proceſſes of ſurgery, will repreſs the after growth; it is truly cancerous, and invariably fatal.

TUMORS of THE THROAT, whether external to the jaws, or viſible only within, give no alarm but by the effect they produce on the breathing and ſwallowing; and yet they are, beyond all compariſon, the moſt dangerous tumors, fatal if neglected, and yet ſo connected with great veſſels and nerves, that to extirpate them is almoſt impracticable.

Suppurations within the throat of a ſcrophulous nature are frequent; and I ſhall have occaſion to lay before you examples of theſe burſting by multiplied openings into the larynx and œſophagus, occaſioning ſuffocation by the matter falling into the trachea, or inanition and death by the contraction of the œſophagus, in conſequence

of long ulceration. Other tumors again, which, at firſt ſight, the ſurgeon is diſpoſed to imagine are ſacs of purulent or ſerous matter, and which I confeſs myſelf to have miſtaken for ſuch, are ſacs of blood formed by dilatation of the extreme arteries and veins ;—aneuriſms of that kind, which I have formerly deſcribed under the name of aneuriſms by anaſtomoſis, but lying too deep under the ſkin and the platyſma myoides muſcle, and too near to the great carotid arteries and their accompanying nerves, to admit of extirpation. Sometimes I have found tumors, eſpecially occupying the fore part of the neck, in the place of the thyroid gland, to be ſacs of blood, but of a ſtructure widely different from that of thoſe aneuriſms, and perfectly curable, diſtinguiſhable from thoſe caſes of aneuriſm by anaſtomoſis, in having no pulſation, and a thicker ſac. The tumor is ſtationary in reſpect of ſize, and not becoming more turgid upon retaining the breath, nor flatter when the blood is repreſſed by the hand : there is no congeries of active veſſels opening into them, and ſupplying them with blood. The blood, I find, has all the characters of having remained long in the ſac, and the ſac itſelf is of a firm conſiſtence, difficultly brought to ſuppuration, infinitely more difficult to obliterate than thoſe ſacs which contain matter or ſerum, and leaving behind them a permanent thicking of the throat. Aneuriſms of the carotid arteries are not frequent, but I have ſeen a pure and ſimple dilatation of this veſſel under the angle of the jaw, of the ſize of a fiſt, intruding upon the throat rather than projecting outwards, little conſpicuous as a tumor, but having an awful throbbing pulſe, when the palm of the hand was laid over it. One would fear nothing in ſuch aneuriſm but the burſting, and the loſs of life by hæmorrhagy ; but long before the ſac inflames or ulcerates, the fever with which it is accompanied, and the difficulty of ſwallowing, ariſing ſimply from its preſſure upon the pharynx, occaſion death.

The SALIVARY and LYMPHATIC GLANDS, lying under the tongue, and about the angles of the jaw, are frequently diſeaſed, and form tumors varying greatly in their form and nature, and growing ſometimes to an enormous ſize ; uſually they contain a gelatinous matter, thick, ropy, facculated, and mixed with ſolid bodies like grains of millet or muſtard-ſeed, ſometimes a pultaceous matter : often theſe tumors are ſo far fluid, as to give hopes when firſt the ſac is opened, that the tumor will entirely ſubſide, and the ſac be eaſily obliterated ; but ſo far ſolid as to mock theſe expectation, for, while the matter runs out the baſe is indurated, ſo that before the opening of the ſac is cloſed, the baſe has become a tumor, firm, glandular, and viſibly increaſing. Sometimes theſe glandular tumors, eſpecially ſuch as are ſeated under the jaws,

though of a ſtony hardneſs, are moveable, ſubject to no pain nor occaſional inflammation, not adhering to the ſkin nor ſubjacent parts, but indolent and harmleſs. Always in children and boys, ſometimes too in adults, ſuch indurated glands are harmleſs, but of firm and knobulated tumors, eſpecially of thoſe ſeated in the cheek, covered with a coarſe, porous, and puckered ſkin, and connecting themſelves ſtrongly with the ſurrounding parts, livid on their more prominent points, and aching with every change of weather or ſeaſon, I have never ſeen a happy iſſue. There is no ſafety for the patient who is endangered by ſuch a tumor, except in extirpation; nor can we aſſure him that ſuch operation (not always void of danger,) will eradicate the diſeaſe.

Here, Gentlemen, are depicted no fantaſtic ſcenes of miſery. Theſe preliminary ſketches and characters of tumors, ſhall ſerve as a ſlight index of the ſubjects I have to explain in detail: the varieties of ſuffering will be but too truly confirmed by facts: the diſtreſs the patient ſuffers who dies of any form of tumor, whether ſuffocating, carious, or cancerous, exceed whatever the moſt eloquent writer on profeſſional ſubjects could repreſent, or the warmeſt imagination conceive. Believe me, it is the ſufferings of individuals that have given me ſuch deep impreſſions, and you ſhall feel, before I have finiſhed the narratives of the caſes correſponding with theſe characters, how little I am inclined, how little I need to exaggerate, the importance of this ſubject.

Could any thing intereſt us more warmly in the fate of thoſe who have tumors, it would be the unconſciouſneſs on the part of the patient, during all the early ſtage of that danger which the ſurgeon ſo diſtinctly perceives, and of the uncertain tenure on which he holds his life; and, in the latter ſtages, his meek and compoſed reſignation. All ranks and deſcriptions of men have an intereſt in this ſubject, the poor who are neglected, the rich who are timid, and often wilfully deceived, the ſurgeon too, who has often no alternative left him, but that of riſking the life of his patient by ſome adventurous operation, or pronouncing ſentence of irremediable diſeaſe. The poor, indifferent to every leſſer deformity, inſenſible to every ſlighter pain, ignorant and thence inconſcious of remote conſequences, improvident always, and often ſtubborn, ſuffer whatever tumor riſes in any part of the body to grow uncontrolled; nothing alarms them which does not interrupt their daily labours; and as it requires an effort of the imagination, and a cultivated reaſon to conceive diſtant dangers, it is in vain that you explain the future conſequences of a diſeaſe like this to men in a lower rank of life. Their family is ſupported by their continual exer-

tions, and, though inclined, they could not remit their daily labours; tumors are thence permitted to grow till they attain an enormous ſize, and loathſome appearance; then, unable to work, they decline into poverty, become objects of charity, and nouriſh thoſe tumors which are to cauſe their death, as the preſent means of gaining their bread. Among the peaſantry, and among the poor, the want of means of preſent ſuſtenance, and the diſtance from good advice, prevents them from applying for relief; and the country ſurgeon, unſupported in any juſt reſolutions he may form, and ſurrounded by rivals, will not readily attempt an operation, which, even if ſucceſsful, brings him no proportioned gain, and little honour, but, if unfortunate, involves him in diſgrace and ruin.

Even thoſe of a higher rank, and well-informed minds, know not how to ſubmit to preſent pain, in order to eſcape diſtant and eventual dangers. Though conſcious that a tumor not void of danger is forming, they linger on in hopes of a ſpontaneous cure; they have heard that ſuch tumors have diſappeared, they have been told that ſuch have been reſolved, and would gladly commit themſelves to the verieſt quack that ever poſted a bill, or ſold a noſtrum, to a man with whom they are aſhamed to find themſelves converſing, if only he will promiſe, with his ointment or plaſter, to reſolve the tumor, rather than to the care of the moſt eminent for profeſſional knowledge, and of their own rank in life, if his diſcourſe leads only to warn them againſt delay, and to declare plainly and conſcientiouſly the danger of it. A tumor, however formidable in its nature, appears at firſt but a deformity, and bears often no character of diſeaſe, nor of malignity; it is not diſcoloured, it is not painful, it affects not the general health, and grows by ſuch ſlow and imperceptible degrees, that the patient becomes reconciled to his condition, inſenſible to its growth, and indifferent to danger which ſeems ſo diſtant, while his ſurgeon, whoſe profeſſional celebrity and daily gains have been ſlowly ripening, is unwilling to riſk them on a barren enterpriſe. The ſurgeon and the patient thus conſpire to deceive each other; agitated by alternate hopes and fears, they feel one day perſuaded that ſome deciſive ſtep ſhould be taken, and the next believe but too willingly that the tumor is leſſening, and may perhaps vaniſh, while "on their wiſeſt reſolutions, the ſlow inaudible foot of time ſteals like a thief."

DISCOURSE II.

ON THE UNLIMITED GROWTH OF TUMORS;

THE FACT PROVED BY VARIOUS EXAMPLES, AND INFERENCES OF VERY GENERAL APPLICATION IN PRACTICE DEDUCED FROM IT.

WHAT the laws and ordinances of nature are, in nouriſhing and maintaining the parts of the animal body, we need not too ſcrupulouſly inquire: how the particles of which it is compoſed become unfit for their uſes, why they are abſorbed, how they are replaced: by what ſort of ſecretion bony particles are ſupplied by bony particles, muſcle by muſcle, or ſkin by ſkin. It is ſufficient that we know that this is the work of living and active veſſels, and that this work is ſparingly performed when their action is low, perfectly when their action is vigorous and healthy, and which is ſo invigorated by various excitements as to produce, in parts much uſed, an augmentation of bulk, and, in parts morbidly excited, an unnatural ſize. Into theſe laws we need not inquire, ſince we find we can but ſlightly influence the functions of nutrition and ſecretion eſſential to ordinary health, while the morbid increaſe of action, from which tumors and unnatural growths ariſe, we can in no degree controul. To enter into ſuch a train of inquiry would delay the uſeful and practical purpoſe of my diſcourſe, which is to deſcribe the characters, forms, and effects of tumors, and it would be not leſs vain than idle; for the phyſiologiſt might as well pretend to inveſtigate the proceſs, by which the individual begets a ſucceſſion of individuals, as that by which the animal body generates new parts: how other ſecretions are generated we muſt firſt learn, before we can know how nutrition is performed, or the atoms and particles of the human frame continually withdrawn and replaced, ſo as to maintain the individual body, though by particles ſubject to continual fluctuation and change.—The ſimple fact is all we can pretend to know: a river is not leſs an individual river, becauſe its particles of water flow unceaſingly towards the ocean, and are replaced by others; nor a tree leſs an individual tree, though its flowers, fruit, and leaves are deciduous, and its branches ſubject to decay and reproduction, by the aſſimilation of new particles and the formation of new parts; it is in the ſame manner that the animal body, though inceſſantly changing in all its

particles, is yet the ſame. In its recrementitious parts this change is ſenſible to all; to the philoſopher it is as certainly known to take place in the blood which enlivens the features, and in the parts through which it ſhines; and by no ſet of phænomena is this ſo well aſcertained, as by thoſe of tumors and unnatural growths, which magnify, as it were, the inviſible phænomena of health into facts viſible and tangible.

In the animal body there can be nothing unnatural, nothing which is not referable to ſome phyſical law: health and diſeaſe reſult from various degrees of the ſame natural action: the ſame animal proceſs which nouriſhes the parts of the human body, if but a little increaſed, augments them in an unnatural manner, ſo that betwixt regular nutrition and that which conſtitutes diſeaſe, I know no diſtinction, except in degree. NUTRITION is that natural proceſs by which thoſe injured particles of the body which need to be continually removed for the preſervation of the healthy ſtate, are unceaſingly replaced in a limited, regular, and orderly proportion, according to the uſe, the exerciſe, the ſecretions, and other neceſſities of each individual part: a proceſs, unceaſing, inſenſible, attended with no diſorder nor conſciouſneſs. TUMOR is an exceſſive ſecretion and aſſimilation of new particles, exceeding the neceſſities, and tranſcending the natural limits of the part; an augmentation of bulk, without a change of texture; for it is an addition, particle by particle, of bone to bone, ſkin to ſkin, gland to gland, muſcular fleſh to muſcular fleſh, and, like the uſual healthy proceſs, it is ſilent, inſenſible, and void of pain or conſciouſneſs. The part or organ becomes unnatural from its increaſing ſize, uneaſy from its bulk or preſſure, dangerous from its influence on the ſurrounding parts: if ſkin is irritated, bone fractured, a gland, &c. bruiſed and injured, the veſſels of ſuch part are excited, but not in ſuch degree as to deſtroy its texture, not ſo as to produce inflammation, effuſion, and ulceration or gangrene, but ſo much only as to adminiſter nouriſhment more rapidly and profuſely: the part thus affected grows, but is unchanged: the tumor is ſkin, bone, gland or muſcular fleſh unaltered: if fat is ſecreted more profuſely, the tumor is of fat; if any natural ſecretion be increaſed and confined, as in glands or burſæ, the tumor is fluid and ſacculated: whatever changes come, in the after ſtages of a tumor to alter its nature and add danger to deformity, we ſhall be careful to deſcribe as the ſeveral ſpecies of tumor paſs in review before us. Tumor has been defined "a new part ſuperadded to the body:" it may be, that there are tumors of this deſcription, but they are ſuch as I do not know, and cannot conceive. It ſeems to me that every tumor is a mere accretion

of nutritious particles in ſkin, bone, gland, or muſcle, according to the nature of the part: tumor is, in ſhort, either an increaſed nutrition, or an increaſed ſecretion, modified indeed, in its form and character, by many changes produced by occaſional inflammation or ulceration.

As I have expreſſed an unfeigned diffidence in the general view I have laid before you, over-rating, I fear, the importance of this ſubject, I muſt next crave your indulgence in thus beginning the actual diſcuſſion of it, with views ſeemingly founded in ſpeculation, but really opening upon me, during a long continued attention to practice, and always, I hope, connected with practical facts. There is, Gentlemen, a wide difference betwixt ſcrutinizing the ſecret operations of nature, deſcribing confidently the ſhape and ſubſtance, the eſſence and nature, of certain particles, which, by ſticking in the extreme veſſels, cauſe tumor; and performing the more humble but profitable taſk of obſerving ſuch varieties and forms of tumors, ſuch beginnings and concluſions of diſeaſes as are plainly expoſed to the ſenſes, and connected with the patient's fate. There are but two conceptions we can form of the nature of tumor: either, that ſomething ſpecific in the matter, or ſomething peculiar in the vaſcular action of a part produces a tumor, firm or ſoft, of fat, of cartilage, of bone, or of fleſh, according to that ſpecific action; or that the properties of the veſſels, which are by violence or diſeaſe, by a bruiſe, fracture, cold, heat, or other foreign cauſe, thrown into excited action, determine the nature of the tumor, or, in other terms, of the ſecretion, fluid, or ſolid of which it is formed. To confeſs that the nutrition of healthy parts, or the increaſe of a tumor are equally unintelligible, and yet equally the reſult of one law of vaſcular action, is an avowal, at once creditable to the individual, and uſeful to ſcience, ſince it frees the mind from the labour of ſpeculating about that which no force of ingenuity can prove, and prepares it for the inveſtigation of ſuch uſeful and ordinary matters as any obſerver may be made to conceive and taught to find uſeful. If there be in the whole circle of pathological ſpeculation a contemptible piece of reaſoning, it is in the pathology of the old ſchools, ſuch, for example, as you find detailed in the memoirs of the French Academy, on the ſubject of tumors: there you will find their greateſt medical philoſophers delighting themſelves with deep unwearied inveſtigations into the nature of various perverſe tumors and morbid particles, which firſt generated, God knows how or why, float next along the general tide of circulating fluids, and are ſtraitened, intercepted, and fixed, at laſt, in the narrow channels of the ſmall glands and extreme arteries, ſo as to generate tumors, all which theſe Gentlemen as

minutely and curiouſly deſcribe, as is they had been ſworn workmen in a manufactory of wens and cancers, with the preparatory profeſſion of making glands, veins, and arteries ſuited to ſuch ſubtile work. Theſe are the mortifying occupations of men not wanting in ingenuity and talents, but in the habit of referring every thing to the general circulation, and to the craſis or conſiſtence of the fluids, rather than to partial actions of the ſecreting organs; in ſhort, of imagining general theories, in place of recording local changes, and obſerving obvious facts *.

This trade of making theories is old enough, if that could be an apology for it: and the language even now in uſe, and which is ſuppoſed to explain all the difficulties in the pathology of tumors, is actually as old as Galen, who ſays, " Of all the preternatural tumors, every variety proceeds from the nature of that influx, which cauſes it; (" Omnium tumorum qui præter naturam ſunt, varietas, ex ejus, quod influit, natura naſcitur,") and the influx of pituitous, crude, thick, purulent, and bloody humors is next copiouſly illuſtrated. Severinus comments moſt

* Perhaps there is not to be found a more ſingular inſtance of that kind of wayward reaſoning from which phyſiologiſts have inferred, that all the ill or good that happens in a living body, all the nutrition adminiſtered to one part, or all the abraſion, ulceration, and deſtruction of another, is to be attributed not to healthy and moderate action of the living veſſels in one part, or to violent and deſtructive action of them in another, but to the accidental pouring forth of nutritious or corroding juices: there is not, I ſay, to be found a more ſingular example of this than the following paragraph of Mr. Mery, who ſeems very proud of his own ingenuity in imagining the new theory of two ſuch oppoſite juices, a nutritious and a corroding one! being at one moment poured in profuſion upon the two oppoſite ſides of the ſame tumor! The thought is ſo brilliant it ſhould by no means be forgotten: " Puiſque le volume de leurs phalanges, deſſeché et vuide de cette matiere, peſoit beaucoup plus que n'auroit pû faire celui de ces os, même dans leur etat naturel, privés de leur aliment propre, ils *devoient* être *abreuvés de deux ſortes de ſucs tres differents, l'un* NOURRICIER, *et l'autre* RONGEANT, car ſans le premier leur maſſe *n'auroit pû s'augmenter*, et ſans le ſecond elle *n'auroit pû être cariée.*" A moſt elegant and luminous antitheſis.

Nothing ſurely can excel this, unleſs it be a certain diſcovery made by the ſame Mr. Mery about ſix years before; for, on diſſecting an enormous tumor of the thigh-bone, in which the condyles were enlarged into a capacious cavernous tumor; he diſcovered every likelihood that the holes which he found on this bony ſhell, and the deſtruction of a part of its circumference, were the work of CERTAIN CORROSIVE SALTS, for he found *a reddiſh coloured tartar*, with which the ſurfaces both external and internal of the bony cavity were coated. " Mais parce que cette partie ſolide, qui formoit ce globe, étoit percé d'une infinité de trous, de figures irregulieres, et de grandeur fort differente; il y a auſſi bien de l'apparence que les ſels corroſifs dont cette matiere étoit emprunté, avoient détruit une partie de ce globe, et diſſout les fibres oſſeuſes qui forment par leur aſſemblage les petites cellules des condyles du femur; ce qui donne lieu a cette conjecture, *c'eſt que je trouvai un tartre rougeatre attaché au dedans et au dehors de ce globe, qui en avoit rongé les ſurfaces.*" Acad. des Sciences, Ann. 1786.

learnedly upon the natural cauſes in the ſoil and in the conſtitution of the air whence ſuch pituitous, ſluggiſh, ſemi-putrid, and corrupted humors ariſe, which, breaking out in the laxer and weaker members of the body, generate tumors, in the hands and in the feet, in the lips and in the ears, in the fore parts and in the back parts, in the groins and in the genitals *.

Such is the philoſophy of tumors. But, while we record particular facts, we cannot but remark, that the complexion and concatenation of theſe facts implies certain eſtabliſhed laws of the animal œconomy, very obſervable and very important to obſerve: we cannot but remark, that vaſcular action is excited by blows and other injuries, and tumor and ſwelling, very different in their nature, or, in other terms, increaſed ſecretion, and increaſed nutrition, follow in proportion to the mode or degree of the exciting cauſe, and that in ſuch invariable connection, and with ſuch important, eſſential reference to the ſupport and maintenance of the animal body, that I cannot but regard this connection of excitement and growth as the diſtinguiſhing property of living matter: "That it is the character of living matter to be thickened by uſe, ſtrengthened by violence." In living matter diſtenſion, which is a ſpecies of violence, while it extends the ſubſtance increaſes its bulk, by exciting the nutritious proceſs; while in every form of inanimate matter, having no ſuch reſiſting power, extenſion (the genus into which all kinds of violence are reſolvable) tends to weaken and deſtroy its ſtructure.

Little as there may appear of either novelty or intereſt in the principle here announced, you will find that it has a very curious relation to all the phænomena which the duties of your profeſſion call you to obſerve, and it will, I doubt not, have, in future, a remarkable influence on all that you do. *Extenſion* of living parts, whether by the fulneſs of veſſels, by the intenſeneſs of vaſcular action, by the diſtenſion of hollow organs, by the gravitation of the ſolid viſcera upon their ſupporting boundaries, or the dependent poſture of parts of the body; extenſion by twiſting, bruiſing, and by other kinds of violence: extenſion by the natural but too violent exertion of the limbs and motion of the members, is the kind of danger

* "Rectius autem, ac planius ex lenta, et corrupta, aut ſi mavis ſemiputri, pituita, aut hujus ſuperfluitate, quæ diutiſſime ſtagnantibus aquis paluſtribus, aut lacuſtribus, aut tactis multo lentore ſituque locis aliis, et arboribus vetuſtis, reſpondent, provenire dixeris limoſa hæc, et fungea concrementa; quæ ſæpe in laxis debilibuſque, corporis locis extuberare peculiariter conſueverunt: in *manibus*, *inquam*, *pedibus*, *labiis*, *auribus*, *facie*, *partibus obſcœnis*, anticis, poſticis, virorum, fœminarum. Sed hæc, accommodatis ad rem exemplis, declarare, commodius erit."

from which the ſeveral parts of the body moſt need to be protected: and they are protected by this one diſtinguiſhing property, viz. of thickening and acquiring ſtrength under extenſion or excitement, whether ſuch extenſion ariſes from living actions within the body, or violence from without.

Extenſion in an inanimate body, by ſeparating its particles, weakens their coheſion, and, if continued or increaſed beyond a certain degree, the ſubſtance gives way and is broken or torn aſunder. Were the effects of extenſion the ſame in the living body as in dead matter, were diſtraction of the living fibres unaccompanied with vaſcular action, or increaſed nutrition, were each particle of living matter to become thinner in proportion as it were extended, how could the animal body exiſt? Surely ruin and diſorder would take place in all the parts of a machine, where every pulſe of the artery, every turning of a limb, every ſlight and every forceful exertion, every act of reſpiration, every natural and vital action extends the parts irregularly and continually? Were not the parts of the animal body thickened in proportion to every violence, no limb could be extended, no joint could play, no muſcle contract, not a breath could be drawn without injury irreparable: but all this is natural, and wholeſome exerciſe, becauſe, every the flighteſt extenſion, is followed by proportioned excitement of the veſſels, and proportioned nutrition, which ſupports the parts of the body equally againſt the vital functions of reſpiration and circulation, and againſt external injury.—Hence even frequent leſſer exertions are invigorating, and ſlighter violence creates a proportioned ſtrength, and the porter, the carpenter, the ſailor, has his limbs, his loins, his arms, thickened by exerciſe, ſo that the bulk and maſſineſs of each part is increaſed by ſlow extenſion, or, in other terms, by uſe. Diſtenſion is accompanied with accelerated vaſcular action, and increaſed nutrition; and that action of the arteries which generates tumors, in place of having in it any thing ſpecific or peculiar, tending to form at one time a ſolid, at another a fluid, in one part a mild, in another a malignant tumor, reſolves itſelf into a ſimple property of living matter, viz. that, under violence or excited action, a part grows: for always, where the healthy functions are preſerved, and the ſtructure not injured by excitement, the nutritious proceſs is quickened. This is a property ſo inſeparable from living matter, and ſo eſſential to the preſervation of the animal body, that, in no circumſtances can a part be extended without being thickened, unleſs indeed it be lacerated at once, its ſtructure deſtroyed, and no room left for vaſcular action to interpoſe. The parts of a living body extended in an unuſual degree, muſt be thickened in an unuſual degree; we could as well imagine

a moving body to paſs in the ſame given time, through twice the ſpace traverſed by another moving body without any ſuperior velocity, as a part of the animal body, to be dilated beyond its uſual dimenſions, without an excited vaſcular action, an increaſe of nutrition, and an augmentation of bulk.

In explaining a doctrine ſo little oſtentatious, ſo little myſterious, having no alluſions to latent properties, to morbid humors, to ſpecific actions, to thickneſs of fluids, obſtructions of veſſels, or any of the machinery of medical hypotheſis, we cannot fail to be uſefully employed: we engage only in the inveſtigation of ſimple facts, with a due obſervance, no doubt, of their relation to each other. Always, as it appears to me, ſimple views of a profeſſional ſubject turn out the moſt impreſſive and inſtructive, for they bear no taint of affectation, either of learning or ingenuity, and ſeem to be purſued in the ſpirit of ſimplicity and truth, the moſt ordinary phænomena of the natural body being made to bear a higher value, by their relation to the moſt extraordinary and fatal diſeaſes.

We are in the daily habit of diſregarding the moſt obvious concluſions, and looking upon changes of bulk or ſtructure as natural, only when ſuch change is within certain imaginary limits, which we know or believe to be conſiſtent with health: but, no ſooner are we alarmed with the degree, or fearful, or actually ſuffering from the conſequences of any change of ſtructure, or extenſion of bulk, no ſooner does it by the addition of pain or ulceration aſſume the complexion of diſeaſe, than we are willing to ſeparate it then from other natural phænomena, and to look for ſome unuſual cauſe.—We ſee, for example, all parts of the body, the bones excepted, having a perfect aptitude for extenſion, and capacity for contraction, eſpecially the ſkin, the abdominal muſcles, the hollow viſcera, the womb; and we find this capacity of diſtenſion and growth, deſtined to preſerve the animal body from degenerating into diſeaſe. When we ſee the uterus diſtended by pregnancy, the ſtomach and bowels by gluttony, the muſcles and ſkin of the abdomen yielding, in the indolent and luxurious, to over-diſtenſion, the ſcrotum yielding to hydrocele or to ſwelling of the teſticle, and the delicate membrane, the peritoneum, relaxing and enlarging, when the bowels deſcend in form of rupture, we hardly reflect on the property by which parts are at once dilated and preſerve ſtill their natural thickneſs: nor are we aware that there is any eſſential difference betwixt the effects of diſtenſion in living matter or dead: but when we obſerve that the uterus once enlarged by pregnancy, the breaſt by ſuckling, the abdomen by diſtenſion, the ſkin by an increaſe of fat, the peritoneum, by being dilated, never ſhrink again to

their original ſize, we are conſcious that there is an acquiſition of new matter; an actual growth.

Let us, in firſt conſidering this ſubject, keep in view the natural functions, and ſuch diſtenſions of parts as are conſiſtent with health, yet explain the changes which lead to diſeaſe. The uterus is conſtituted with an active ſyſtem of arteries, to nouriſh the fetus; and endowed with a capability of extenſion fitting it to dilate as the child increaſes in ſize to the period of birth, or to contain more than one. Its veins ſeem peculiarly adapted to dilatation: in diſſecting the gravid uterus, we ſhould be inclined to imagine its increaſe of thickneſs depended ſolely on the calibre of its veſſels being enlarged, and conſiſted more in fluids than in ſolids; but when the lochiæ have flowed,—when all that is ſuperfluous of the fluids is diſcharged,—when the blood accumulating for nine months is diſgorged, we find that the uterus does not ſubſide to its priſtine ſize, that there is a great difference between the uterus once pregnant, and that of a virgin; we find, in ſhort, that its maſs is increaſed, that there is an actual growth.

To what cauſe is this to be imputed? I believe you will acknowledge the probability, of the whole ſubſtance of the womb,—of each leſſer vein and petty artery having actually increaſed in thickneſs of coats, i. e. of fleſhy and cellular ſubſtance, if I ſucceed in proving, that no individual veſſel is at any time dilated, without a proportioned and a permanent thickening of its coats. Perhaps no dilatation can be more ſimply ſo than that of a vein which gives way becauſe of the delicacy and tenuity of its coats, and becomes varicoſe: yet the moſt ſimple varix is not a mere dilatation: no vein is dilated without having its coats thickened: and no ſmaller branch of vein or artery is ever dilated to nearly to the ſize of a trunk, without having more than the ſtrength of one. I have never diſſected the veins of a varicoſe teſticle, or varicoſe leg, which had not coats thicker and more leathery than thoſe of the vena cava. The tumor produced by a varicoſe vein is permanent, becauſe it is truly a tumor,—becauſe it is not mere dilatation but actual growth,—becauſe the thickneſs of coats, and the bulk proceeding from the induration of cellular ſubſtance, at leaſt, equals that produced by the collected blood. Perhaps there is no miſtake more common than the imagining that a varix, being a mere dilatation of a vein or veins, may be diſpelled by preſſure; experience proves how impoſſible this is, and the extirpation of a varicoſe vein demonſtrably proves how much the coats and cellular ſubſtance are thickened. The extirpating the vein of a varicoſe teſticle, is an operation which I have often been obliged to perform. The

diſeaſe is a moſt miſerable and irkſome one, and except hernia, or fiſtula of the urethra, I know none which ſo early marks the features with traits of diſcontent and fretfulneſs. The patient is long of diſcovering the cauſe, and ſtill longer of believing the effect; for he is told by his ſurgeon, that the ſwelling is but a dilatation of the ſpermatic veins, an accident quite inconſequential, and that his pains and miſerable feelings border rather upon hypochondriaſis, than upon any ſerious malady. But his feelings are not to be overcome by perſuaſion, he continues conſulting various ſurgeons, and ſuffering continually; there accompanies this kind of varix, a perpetual and irkſome ſenſe of uneaſineſs; there is a frequent indiſtinct pain, increaſing almoſt to ſickneſs when he walks long, or ſtands; and he never ceaſes to complain of benumbing pains, which run down along the thigh, and ſhoot up into the loins,—like the weary pains of a rheumatiſm not very acute.—The tumor ſeated on the back of the teſticle, which is waſted in proportion to its ſize, feels worm-like. The round and globular turns of the veins move a little over each other. We know that the diſeaſe is a dilatation of the ſpermatic veins, and imagine, and actually ſay to our patient, that they can be emptied by preſſure; but they never are emptied by preſſure, nor ever can be; cut out the maſs, and then you know it to be an actual tumor, for ſo conſtantly does the thickening keep pace with the dilatation, that a varicoſe tumor is a very heavy and maſſy one; each turn of the dilated vein is thickened in its coats, and involved in a firm cellular ſubſtance. When the maſs, after the operation is laid upon the table, it is found to be a ſolid tumor, which no preſſure can reduce: after all your induſtry in ſqueezing out the blood, nay even after the tumor has been for many days ſoaked in water, it is nothing diminiſhed in ſize: you can diſtinguiſh the mouths of little arteries curling up among the looſe cellular ſubſtance which involves the veins; and when you cut the tumor acroſs, in various directions, you find the veins, from the thickening of their coats, ſtanding in full calibre, quite rigid; they reſemble exceedingly the ſection of the arteries of the umbilical cord, in the thickneſs of their coats, in their not ſubſiding or falling flat, in being imbedded like them in a thick cellular ſubſtance filled with a mucous ſecretion which ſupports them.

When we feel a varicoſe leg knotty and deformed with the tortuous and dilated veins, we diſtinguiſh knots at certain points ſo hard and firm, that we cannot but imagine, that in ſuch ſudden turns and angles of the veins the blood is firmly coagulated; but upon diſſecting theſe, we find that ſuch turns of the veins are the

parts leaſt occupied with blood, and the moſt thickened and hardened in their immediate coats, and in the ſurrounding cellular ſubſtance.

When an artery gives way by ſome weakneſs in its coats, ſo as to form aneuriſm, it is generally found that ſome weaker part of its muſcular or fleſhy coat yields; if the tube give way all at once, and pour its blood into the cellular ſubſtance forming what is called a falſe aneuriſm, then is it entirely deſtroyed, and no interval left for excited action to interpoſe and thicken its coats; but if its ſides yield gradually, and are merely dilated, preſerving ſtill their natural circulation, that natural circulation is quickened and excited, by the partial injury to its ſtructure, and the coats of the artery are thickened, to three or even to ten times their natural ſize, the degree in which they are thickened being proportioned to their original ſtrength and preſent dilatation, the thickening increaſing as the dilatation proceeds. What aneuriſm was ever found, in the artery of the ham, in the thigh, in the carotid, or in the aorta, without coats of very ſurpriſing thickneſs, ſo as in many caſes to conſtitute a very conſiderable proportion of the tumor? In this caſe, as in that of the yielding of ſome important veſſel, we are uſed to imagine ſome particular interpoſition of nature, and are apt to ſay, "nature has been provident and careful in walling up the weakened parts of the veſſel, with thicker coats:" but nature is more provident than ſuch a declaimer ſuppoſes; nature intruſts not the repairing of each accident, weakneſs, or breach of continuity, to ſpecific exertions adapted to the particular purpoſe; but regulates ſuch interpoſition, by one general property of living matter, viz. of thickening in proportion as it is extended: as wounded parts are healed by adheſion, ſo are dilated or ſtrained parts thickened by increaſed nutrition.

The effect then of this property inherent in the parts of an animal body of growing under diſtention, is to ſubſtitute thickening, bulk, tumor, (the leaſt inconvenience we can expect to ſuffer, after a part has been hurt or has given way,) to actual burſting, danger and death. Tumor, and various modifications of diſeaſe follow from the ſame law of vaſcular action and nutrition, which maintains health. If each individual veſſel, whether artery or vein, have its coats thus thickened by dilatation or partial laceration, the ſame muſt be preſumed of each minuter veſſel in the diſtended womb, of each leſſer vein and petty artery in a piece of diſtended ſkin, or in a diſeaſed gland: the enlargement then of each blood-veſſel, by depoſition of nutritious matter along its ſides, makes not a mere extenſion of veſſels, but a ſolid and permanent bulk: the more veſſels are enlarged, conſiſtently with their healthy

action, the more particles are they able to ſecrete; whence the increment of tumors is perpetually accelerating, unleſs when oppoſed by peculiar cauſes; but to puſh our inquiries farther than this general law were a vain and idle attempt.

The breaſts, the ſcrotum, the glands under the chin, and all the pendulous parts of the body afford conſpicuous examples of the effect of diſtenſion; for a pendulous poſture is the moſt irreſiſtible of all diſtending cauſes, being the moſt unremitting, the moſt gentle, the leaſt interfering with the regular proceſs of nutrition, the moſt continually ſoliciting an increaſe of vaſcular action. Breaſts in women have all the mechaniſm fitting them for a profuſe ſecretion; at the period of life in which this ſecretion may be required, they attain their bulk; when the mother is to ſuckle, the breaſts ſwell, and ſubſide but in a ſlight degree when the flowing of the milk relieves the vaſcular action that prepares it. The period of ſuckling leaves behind it an actual increaſe of ſize, never to ſubſide again: ſucceſſive periodical enlargements in thoſe who have been long nurſes, enlarge the breaſts to an enormous and diſpleaſing degree, approaching as nearly as may be to diſeaſe. Theſe painful and occaſional excitements of the veſſels of the breaſt, preparing it for ſecretion, often ſo far exceed the healthy and natural degree, that the purpoſe of ſecretion is defeated, actual effuſions take place into the cellular ſubſtance, ſuppuration enſues, the glands are much hardened, and the breaſt deſtroyed ſo as never after to ſecrete milk but imperfectly: and when to this natural enlargement, the pendulous poſture is ſuperadded, as in the warmer climates, where the breaſt is left unſupported, the whole breaſt enlarges and hangs low, the ſkin is elongated, the milk glands may be felt in knots and cluſters, as diſtinct as ſtones in a bag; and ſuckling being continued unceaſingly by the women of thoſe climates, the child grows ſtrong enough to climb and cling to the mother's back, while her breaſts ſo relax as to be eaſily thrown over her ſhoulder for the little one to feed and ſuckle.

No example nor proof can be more ſimple and impreſſive of the effect of diſtenſion, than the change which the delicate membrane of the peritonæum undergoes, when protruded before the inteſtine in caſe of hernia: in itſelf the peritoneum is thin, delicate and tranſparent; when firſt protruded it is ſtill thin; but at each ſucceſſive protruſion,—after each paroxyſm of inflammation and pain, after being extended a little wider, and preſſed a little lower at each deſcent of the bowel, it grows thicker and harder, till it can be no longer recognized as a portion of the peritoneum: I have found it in the hernia of an old beggar as thick as his leather bag, and as coarſe and rigid in its texture.

In the more ſimple diſeaſe of hydrocele, the effect is invariably the ſame; and the tunica vaginalis, a part originally more delicate, acquires a maſſineſs and ſubſtance which I have never ſeen the herniary ſac attain to: In a hydrocele increaſing for a long courſe of years, every exciting cauſe, and every diſtending power co-operates, both to thicken the parts by continually ſoliciting nouriſhment, and to harden them by occaſional inflammation:—Firſt, the blow which occaſions the diſeaſe, (for it is in 9 of 10 caſes a blow that cauſes hydrocele,) excites the veſſels, and cauſes an increaſed ſecretion; Second, the collection of water gradually increaſing gives the ſtimulus of extenſion;—thirdly, the dependent poſture of the part gives effect to its weight, and the diſtenſion of the part, and its weight, both continually increaſing, accelerate the growth in a geometrical ratio; ſo that a hydrocele, when once allowed to ſurpaſs the uſual bounds, is ſure, if the patient live, to attain to an enormous ſize, with coats, or walls rather, proportionally thick.—William Hill a farmer, a coarſe big man of fifty years of age, had nouriſhed a hydrocele from the time he was of the age of ſeventeen: When he came under my care the tumor was of an enormous magnitude, it occupied only the left ſide of the ſcrotum, preſſed the right teſticle far above the groin, and extended quite to the os ilium of its own ſide, being covered with a coarſe-grained ſkin, for the rugæ of the ſcrotum had greatly enlarged: The waters of this hydrocele were too turbid not to be perfectly opake, and the walls too thick beſides, to allow any degree of tranſparency; but the fluid, though it could not be ſeen, could be very diſtinctly felt; the ſac was every where ſenſibly thick, and in many places hard, but eſpecially at the middle of the tumor, where it ſeemed to be girded as if by a firm and hard ligament, and along the back of the tumor, where the ſpermatic cord could be diſtinctly felt, big and hard, as if abſolutely converted into a ligament. The body of the teſticle was alſo eaſily diſtinguiſhed at the lower and back parts of the tumor.

It was about thirty years before the time of his putting himſelf under my care, he had firſt perceived, after a ſlight blow, a ſwelling in the ſcrotum which for ſeven years had given him occaſionally much uneaſineſs; to this period of occaſional pain ſucceeded a ſofter ſwelling which hid the teſticle. It was in the month of October that he came under my care, in the month of June preceding he had fallen from a cart, and bruiſed the ſcrotum ſo as to excite violent pain, to which ſucceeded inflammmation upon the ſurface, and a viſible and rapid increaſe of the tumor; and the ſwelling having ſubſided, and the redneſs of the ſurface diſappeared, I performed the operation in the month of October. It was obviouſly dangerous to draw off the

water, and attempt to obliterate, by a wine injection, a ſac ſo large that it muſt have ſloughed, and impoſſible to draw it off and let it collect again, ſo thick was the ſac and ſo rigid. I made my inciſion along the fore part of the tumor, and much as I was perſuaded of the induration of the ſac to a cartilaginous degree of hardneſs, I was yet ſurpriſed to find a ſubſtance which actually reſiſted my knife; I was forced to make an oval inciſion, the form beſt ſuited indeed for laying open a ſac ſo thickened as to require (much of it at leaſt) to be cut away. I performed in ſhort the obſolete operation of Sharp, cut out a very large oval portion from the fore-part of the ſac, eight or nine inches long and four broad, which was not merely thickened, but actually oſſified in its central parts. The whole ſac was exceedingly thick, and the oſſified part, the borders of which were of a cartilaginous thickneſs, exceeded five inches in length and two in breadth; the part which lay upon the ſpermatic cord was ſo firm as to be felt from behind, while the ſac was entire, and ſo ſtudded with watery veſicles that it needed to be laid open by an inciſion. The teſticle was found, and not enlarged beyond the healthy condition, or very little: The water was clear but viſcid, and amounted to ſeven pints: Such a ſac could not ſhrink, could not re-unite; much more of it, I doubt not ſhould have been cut away: had I been at this time an older, and a better ſurgeon than I was, I ſhould have cut away much of the enlarged ſcrotum, and all the ſac, leaving no more than merely to cover the teſticle: I felt very ſoon the error of my ſeemingly lenient proceeding, for the operation being performed on the 10th October, I found on the 19th, when the dreſſings were firſt removed, a ſuppuration not well eſtabliſhed, and the ſcrotum and ſac ſloughy and gangrenous; but by the dreſſing of the 22d I found much of the ſlough ſeparated, and my fears quieted; by the 29th I found the thickneſs and bulk of the groin, and the tumor of the ſpermatic cord much diminiſhed by a profuſe ſuppuration, and in the end my patient was well and happily cured.

Rarely, in theſe countries, though very frequently in our Indian poſſeſſions, do we find the ſcrotum and coats of the teſticle thus thickened and indurated; but ſometimes they degenerate, in conſequence of long continued vaſcular action, into a fleſhy maſs of aſtoniſhing weight. Such, for example, are the monſtrous hydroceles, or hernias, of which we have drawings by Mr. Kite of Graveſend; ſuch are the enormous and diſguſting tumors which are ſeen in our colonies, where the African ſubject to this diſeaſe, is ſeen baſking in the ſun with a tumor filling all the ſpace betwixt his legs, and as bulky actually as his body, too ponderous to be

carried by a ſling, and which he trundles along upon a ſort of barrow, and expoſes to public view to extort alms from the paſſers by.—Such are the enormous tumors operated upon by Mr. White of Mancheſter *. When the teſticle was from long

* About five years ago I was ſent for to T. B. a farmer near Leigh, in this county, of upwards of ſixty years of age. He had a large tumor in the ſcrotum that reached down to his knees, and was thicker than his waiſt, which he apprehended began in his right teſticle. It had been twenty years in growing to that ſize, and had for ſome years paſt occaſioned great difficulty in walking. A few weeks before, the tumor had ſuppurated and burſt, and continued to diſcharge a very offenſive matter in great quantities. He had likewiſe from his youth been troubled with a hernia of the ſame ſide. The penis and the other teſticle were buried in this tumor, which appeared to be a confuſed maſs of putrid fleſh. The diſcharge had brought on hectic ſymptoms, and he was now confined to his bed, ſeemingly in the laſt ſtage of a conſumption. I informed his friends that there was no chance but from an operation, and that but an indifferent one, as his age and extremely weak ſtate rendered him but very unfit to bear an operation that muſt neceſſarily be ſevere and tedious, from the great deal of diſſection requiſite to preſerve ſo many parts of conſequence. It was however conſented to, and I began with a longitudinal inciſion, made very cautiouſly, in order to diſcover the contents. I found that the inteſtines occupied the upper part of the tumor, in as large a quantity as would have filled a hat crown, and that the lower part appeared to conſiſt of the right teſticle, larger than a man's head, and hollow within. I reduced the inteſtines through the rings of the abdominal muſcles, and retained them by a ſtitch through the teguments. I then proceeded to diſſect away the tumor, and left the penis and other teſticle entire. The blood veſſels were ſecured by dry ſponge, and the common dreſſings and bandage were applied. The wound went on very happily, he continued to gain ſtrength daily, and is now as hearty and ſtrong a man as moſt of his age, not ſuffering the leaſt inconvenience from the diſorder. I however adviſed him to wear a truſs to prevent the inteſtines from puſhing down to the cicatrix.

My father has favoured me with the following nearly ſimilar caſe.

July 20th, 1725. I was ſent for to Mr. Warrington of Whaley-bridge in Cheſhire, a very tall, ſtrong, luſty man, aged ſeventy-two. About twenty years before he had perceived a hard tumor in his right teſticle, which had ſince that time gradually increaſed to ſuch an enormus bulk, that he could not, without the greateſt difficulty, either ſit or walk. At laſt, the pain occaſioned by its tending to ſuppuration, together with the fever, obliged him to keep his bed. He likewiſe complained very much of pain in his loins, and difficulty of making water, together with great coſtiveneſs. When the bandage by which the tumor was ſupported from his neck was taken off, I viewed it, and found the ſcrotum to meaſure, from the os pubis to the bottom, nearly thirty inches, and apparently capable of containing five or ſix gallons. The penis was entirely buried in the tumor, a ſmall hole, not unlike a navel, remaining for the diſcharge of the urine. The tumor had burſt of itſelf in the moſt depending part, and the people about him had catched a gallon of reddiſh matter, with a red ſediment, beſides what was loſt in the bed and upon the cloaths.

Upon examination with a probe, I found a large putrid body, that proved to be the right teſticle in a corrupted ſtate, grown to the ſize of a child's head, which blocked up the orifice, and hindered the diſcharge

diſeaſe become ſpongy, and putrid, and enlarged to the ſize of a child's head;—where the walls of the tumor formed by the ſcrotum and tunica vaginalis, were of a fleſhy thickneſs, where the whole tumor meaſured nearly a yard in length, while its fluid contents amounted to five or ſix gallons, and the ſolid ſubſtance amputated to eight pounds; where the parts long extending had at laſt ulcerated, and where the operator in extirpating this maſs of putrid fleſh and fetid matter, was obliged to introduce his hand and arm up to the elbow within the ſcrotum, to grope for the penis and ſave it from the knife, juſt as he would have introduced his hand into a gravid uterus to ſearch for and deliver the child.

To whatever cauſe the original inflammation and vaſcular action may be aſcribed, to time, and the pendulous poſture, to the increaſing weight, and increaſing diſtenſion, to that law of the animal economy by which increaſed vaſcular action is excited and increaſed, and nutrition ſolicited towards a part, muſt we aſcribe the chief bulk of ſuch a tumor; and the ſurgeon will oftener find it wiſe to regard ſuch growths rather as tumors which are to be extirpated with a due regard to the other parts, viz. the teſticle, the penis, than as hydroceles that are to be opened with the deſign of obliterating the ſac *.

of the matter; I dilated this orifice with a pair of crooked ſciſſars, and two gallons more of the ſame matter were diſcharged, together with the teſticle, which I eaſily took out. Its internal ſubſtance was of a bright red colour. After taking up an artery which had been divided, I filled the cavity with tow well moiſtened with ſpirit of wine and mel Egypt. made warm, and applied the proper dreſſings. He reſted very ill that night, and a great quantity of thin purulent matter was diſcharged. His pulſe was unequal and trembling, the affected parts were cold, and this large bag, which the day before was three fingers thick in the bottom, callous and rigid, in the morning was become quite flaccid. All theſe ſymptoms ſtrongly indicating a mortification, I forewarned my patient and his friends of the danger, in order that extirpation might immediately take place. This being conſented to, I proceeded in the following manner: I introduced my hand and arm beyond the elbow by the inciſion that was already made, in order to find the penis and preſerve it unhurt; I then divided the ſac from its baſe to the hole where the urine was diſcharged, and diſſected the ſkin round the penis, preſerving as much of it as poſſible towards the os pubis, that the ſurface of the wound might be leſſened. I finiſhed with cutting off both ſides from the groin. He bore this tedious operation with the greateſt fortitude, and the whole wound was cicatrized in two months. The penis was reſtored to its natural figure; and notwithſtanding his long illneſs, his advanced age, and the great diſcharge of blood and matter, he perfectly recovered a vigorous ſtate of health. It is worthy obſervation, that the ſpermatic veſſels on both ſides had degenerated into ligaments, and did not diſcharge a drop of blood. The left teſticle was ſoft, flaccid, and increaſed to near the ſize of a horſe's. It was affected with a perfect hydrocele. The whole maſs of fleſh, after the operation, weighed eight pounds.

* When I come to treat profeſſedly of tumors of the ſcrotum, I ſhall lay down a more expreſs rule.

We are conſcious that without this very property which ſo often produces diſeaſes the moſt monſtrous, the body could not exiſt, nor any part ſurvive one day thoſe ſlight injuries and that continual waſte which the natural actions and motions occaſion: "Extenſion and violence of whatever nature require and produce in the living body an increaſe of nutrition." To create a thickening, and a new ſupport to weakened parts is the ultimate end: excited vaſcular action is the means: and wherever vaſcular action is excited, by whatever cauſe, in a degree not inconſiſtent with the healthy functions of a part, nor injurious to its ſtructure, that part muſt grow, be it ſkin, bone, gland or fat, membrane or burſa, limb or bowel.

"Eleanor Fitzgerald, a native of Ireland, a Roman Catholic, born in the county of Carlow, and now about fifty years of age, was carried by her parents, when a child, to Charleſtown in South Carolina, to which place they emigrated: There, when grown up, ſhe married a ſhip-carpenter, and lived with her huſband in Charleſtown fourteen years, where ſhe bore him ſeven children. She is a woman of a very ſingular appearance, her face, of a gypſey or rather Tartar caſt, with thick lips, a peaked noſe, ſmall eyes, and a wrinkled forehead; bears the marks of a variety of climates: her complexion is of a deep yellow or dingy colour, ſun-burnt and freckled:—Her hair is very black and matted, the ſkin of her body fair and healthy, but ſtudded all over, eſpecially on the ſhoulders and arms, with ſmall tubercles like berries: The enormous growth of ſkin which hangs from her neck and breaſt, and which when ſhe opens her tattered cloaths, rolls out like the bowels one turn over another, is at once diſguſting and horrible: were ſhe not alive and known to thouſands, wandering at this moment and begging her bread, I ſhould be afraid even to expoſe this drawing, which is a true portrait, much more to relate her tale."

"About five years ago ſhe embarked with her huſband for London his native place, at Charleſtown, in the ſhip Charming Nancy, Captain Stewart, a ſtore-ſhip, crowded with more than 150 people, paſſengers and crew. After they had been three weeks at ſea, and after they had accompliſhed, as ſhe imagines, half their voyage, they were overtaken by a dreadful ſtorm of thunder and very vivid lightning, with rain and hail. The ſhip was ſtruck about mid-day; the numbers who were ſtruck down and never roſe again, and the numbers who were deprived of ſight, I fear ſhe, in the fervor of impreſſing her pitiful tale, exaggerates very greatly; but ſhe herſelf was ſtruck down, and her huſband was among the killed: How long ſhe lay upon the deck, ſhe never knew; but upon recovering ſhe was ſenſible of a ſmart burning pain on the left ſide of her head. The part felt heavy,



Drawn by J. Bell.

Engraved by E. Mitchell.

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ELEANOR FITZGERALD.

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and upon putting up her hand ſhe found that a ſoft and baggy tumor had ariſen all at once as big, ſhe ſays, as the crown of a hat, which filled every day more and more, and fell lower towards the ſhoulder; for it was a tumor of the back part of the hairy ſcalp behind the ear. The voyage laſted about three weeks, and before the ſhip entered the Thames this tumor burſt, and continued for a long while to diſtill a pure limpid ſerum; the bag having by this time deſcended ſo low as to lie flapping upon the ſhoulder: but the ear was not yet elongated, and the tumor was ſtill limited to that part of the hairy ſcalp, which is diſtinguiſhed in the drawing by a blacker colour. The ſerum continued to diſtill hot and acrid from this thick flap of ſkin, excoriating the neck and breaſt, and ſtill the tumor continued to be elongated, hanging over the ſhoulder, and extending over the breaſt.

The indifference of one in her rank of life, little accuſtomed with cleanlineſs, may eaſily be imagined: her tumor ſhe nouriſhed in filth and naſtineſs for a year before ſhe applied for aſſiſtance. She, after this, expoſed her tumor, (according to her report) to the ſurgeons both of St. Bartholomew's and Guy's hoſpitals, who were, ſhe imagines, unwilling to perform any operation. The growth of ſkin now hung pendulous, not only from the occiput and ear, but from the ſhoulder and breaſt. She was perſuaded by her prieſt to go to France, and ſhe found protection and help from a charitable lady of her own religion, who carried her along with her to Paris, and put her under the care of Deſſault. It was about eight days after ſhe had been received into the Hotel Dieu, that the operation was performed. The heavieſt and moſt pendulous part of the tumor, all that was eaſy to amputate, was cut away; but much of the roots of it was left, and it did not fail to grow again, became pendulous, increaſed very rapidly, and took thoſe ſingular forms which the ſketches repreſent, in conſequence of its root being tucked and braced down by the long line of cicatrix formed by this unſucceſsful operation. She recovered from the inciſions in little more than a month, left France about a year after, under the protection of an old Lady, mother to Dr. Obrian, whoſe death ſhe bitterly laments. Since this period, in which ſhe loſt her only friend and protector, ſhe has lived a very deſolate and wandering life. From London ſhe found her way to Ireland, where ſhe hoped to find her grandfather and grandmother. She begged her bread in Ireland from village to village, and ſpeaks of great diſtreſſes ſhe encountered during the rebellion,—ſleeping under hedges, in barns, and out-houſes; crawling from cabin to cabin, and living on a bit of bread and ſalt, and often wanting even that

ſlender means of ſupporting life. To eſcape the miſeries of famine in her native country, he has begged her way thither.

Whether her pitiable tale be true or falſe, or the number of men ſtruck dead by lightning as mere a fiction as the tale of "Auncient Mariceer," and all her voyage from Carolina, as fabulous as the voyages of Synbad the Sailor, is to us a matter of no concern, and alters no eſſential feature of her caſe, where all that is wonderful, and nothing perhaps ever happened in the human body more ſo, is demonſtrable. There may have been in the ſkin of this woman a general tendency to diſeaſe, ſince the ſhoulders, arms, and face too, in ſome degree, are ſtudded with ſmall reddiſh tubercles. The chief volume of the tumor certainly begins in that part, which hangs thick and baggy from the back part of the head, and its origin in the loweſt part of the hairy ſcalp is denoted by its black colour, proceeding from the roots and ſtubs of her duſk hair. This coloured part indicating its origin from the ſcalp, is extended now as low as to the ſhoulder; it has a firm ſurface, large tubercles, a ſcaly hardneſs, and a blue colour; the ſtubs and roots of her black hair, are ſeen growing in it. From this deſcends a great and voluminous roll of ſkin, which hangs over the breaſt and belly, to the length of a yard and half, like a bundle of inteſtines, and from her ear, which is elongated to a prodigious length and ſize, hangs another correſponding roll of ſkin, which falling from the neck and face, conſtitutes a great part of the volume of enlarged ſkin, which, as ſhe ſits, hangs over her knees. Betwixt thoſe voluminous rolls of ſoft and flaccid ſkin are the ſcars of thoſe inciſions made in the Hotel Dieu. One large and voluminous fold, taking the rolls of ſkin down to the ribs—ſerving like ligaments to ſuſpend them, and drawing them into the convoluted forms of inteſtines, hangs from the neck, and her epaulet-like fold comes from the ſhoulder, falls over the left breaſt, and forms the boundary of the tumor on that ſide where its volume is ſupported by her arm, in theſe drawings.

This immenſe volume of ſkin is thin where it hangs from the occiput, neck, chin, and ſhoulder; but is very thick, maſſy, and doughy-like, at its lower part, where the thick rolls are repreſented in the drawing lying upon the knees, and ſupported by her hand, which alone prevents them falling over the knee, almoſt to the ground. This monſtrous growth of ſkin, the moſt voluminous that ſtands upon record, is ſimply ſkin, without the ſlighteſt taint of ulceration on any part of its ſurface, or the ſlighteſt tingling of pain. It is ſkin, luxuriant, healthy, extremely vaſcular, with its cellular ſubſtance looſened and evolved, ſo as to give a



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ELEANOR FITZGERALD.

rawn by J.Bell.

Engraved by E. Mitchell.

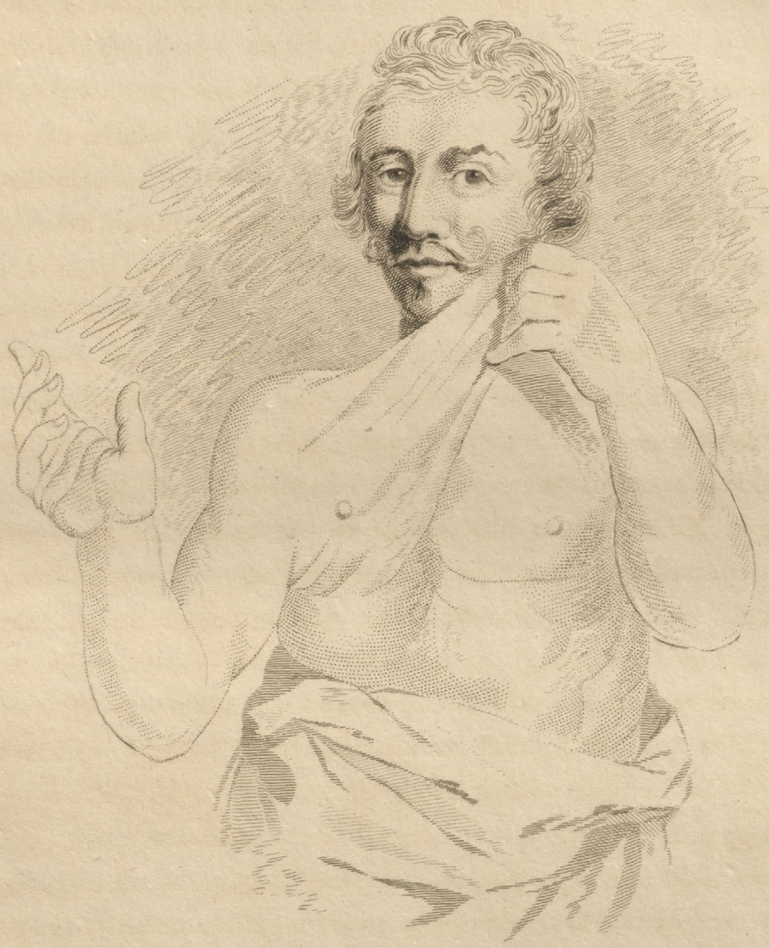
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doughy feeling when the whole tumor is handled. It is plainly the proper ſubſtance of the ſkin, thickened ſo as to give it a reſemblance rather to fleſh; its pores and papillæ are enlarged, and its ſurface ſomewhat reddened, ſo as to reſemble ſkin ſeen in a concave mirror magnified: in ſome parts it is livid, with a ſurface of changing colours betwixt red and blue, like the blue or ſilvery part of a turkey-cock's gills; and all of it has the ſame puffed feeling; and as for its general forms, this tumor, which, had it not been partly amputated, would probably have hung from the neck and occiput in full flat folds of ſkin, is by the ſcars and adheſions at the place of the inciſion, ſo fixed down to the breaſt, that the more pendulous parts have, in gradually enlarging, aſſumed the form of rolls of red and fleſhy ſkin, having no taint of diſeaſe about them, nor the ſlighteſt ſpeck of ulceration,—ſome ſlight excoriations excepted, like thoſe in the groins of an ill-nurſed child, and theſe excoriations are only at the roots of the folds where they roll and rub over each other. Upon lifting up the rolls of the tumor, and looking into their roots, where they are bridled down by the ſcars of Deſſault's inciſions, the veins which carry back the circulating blood of this very vaſcular maſs of ſkin, are ſeen running along thoſe flat adhering parts, like veins upon a meſentery, not ſmall nor tortuous, but ſtraight and large; not ſuch as might be compared with the veins of the arm or neck, but more nearly reſembling thoſe on the belly of a horſe. Some of theſe venous trunks are as big as the thumb, tenſe, and gorged with blood: When ſhe travels about on her begging excurſions, ſhe carries her tumor in a ſling made of an old table-cloth, as a ſewer of corn carries the ſeed in the bag before him: When ſhe ſits down, opens her cloak, and unfolds this diſguſting and horrible tumor, you can hardly be perſuaded that you do not ſee her belly open, and her bowels in motion! for the rolls of ſkin, fleſhy and red, roll over each other as ſhe handles them; and the ſlighteſt handling at one fold of the tumor, puts the whole into this vermicular kind of motion:—the whole volume would roll over her knees, but that ſhe contains it in her lap, by putting one or both her arms round it.

Our object is to ſpeculate upon this tumor, which ſhe cheriſhes as her means of gaining her bread, not to extirpate it, elſe nothing, as it appears to me, could be imagined more practicable. How ſo great a ſurgeon, and ſo ingenious a one as Deſſault, ſhould fall into the miſtake, of extirpating ſo great a volume of tumor with the knife, I cannot imagine, when it would have been ſo eaſy, by tranſfixing all its roots by ligatures, and compreſſing it betwixt two rolls of wood, after the manner of the quilled ſuture, to have mortified and cut it off.

Skin is indeed the part of the human body appointed, from its high vaſcularity, to nouriſh the ſubjacent parts, and carry the circulation to the ſurface, whence a fair and fleſhy ſkin makes a full plump body, characters inſeparably united in the phyſiognomy, perſons, and temperament of northern nations: and deſtined, by its cellular texture, to yield, to extend, to thicken, accommodating itſelf to all flexures and extenſions of the limbs, and to every natural growth and occaſional ſwelling *. The ſkin of a perſon once dilated by fat never ſhrinks.—The ſkin of the abdomen, in a pregnant woman, acquires an actual increaſe of growth, and when ſhe is delivered of her child it remains wrinkled and corrugated, forming a volume of ſkin, capable of containing two bodies: it is grown, not by extenſion, which muſt attend all living as well as dead matter, but from that vaſcular action which extenſion excites. This unprecedented tumor of the woman, Fitzgerald's, ariſes from vaſcular action excited by another cauſe; it is mere increaſed nutrition,—ſimple growth, ſkin unchanged in form or texture, with each pore, papilla, and viſible particle proportionably enlarged; and in every fold of this tumor are to be ſeen veins ſo dilated for the return of the blood circulating within the maſs, as to demonſtrate the degree in which each petty artery ſecreting new particles, is invigorated in its action, and enlarged.—This tumor intimates to us, that every part thus growing beyond the natural bounds, has no limits to its growth, unleſs its ſtructure is deſtroyed by the exceſs of vaſcular action, and that there are few accidental or other means to put a period to that vaſcular action by which it grows. This perſuaſion of the unlimited growth of tumors ſhould be preſent to the imagination in all our

*A caſe intitled by Meek'ren, "*Debilitas Extraordinaria Cutis*," has always appeared to me a ſurpriſing proof of the degree in which nature has adapted this integument to dilatation and diſtenſion, without any actual diſeaſe or tumor.—This young man had the ſkin, on one ſide only of his body, ſo relaxed, that he could extend it without pain to any degree. In the year 1657, ſays Meek'ren, a young man, a Spaniard, named Georgius Albes, about 23 years of age, preſented himſelf at our hoſpital, and was ſeen by Van Horne, Sylvius, Gulielm. Pyſo, and Franc. Vander Wiel, who graſping with the left hand the ſkin of the right breaſt and ſhoulder, drew it out till it touched his mouth; on taking the ſkin under the chin with both his hands, he could draw it down like a beard till it touched his breaſt, or pull it upwards till it covered his face and eyes; or extend it ſtill more, till it touched the vertex; or pinching the ſkin of the knee, he could extend it as he pleaſed upwards or downwards, to the length of half a yard.—The ſkin thus extended retracted itſelf again; but this was only on the right ſide of the body; it was a diſeaſe, and not a trick or capability of extenſion produced by cuſtom. "Conſideratione dignum erat, cutem eam quæ tegebat dictis locis partes ſiniſtras, extendi nullo modo potuiſſe, firmiſſime iis adherentes; cauſam dignoſcere hactenus non ligavit. Meek'ren.



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GEORGIUS ALBES A SPANIARD.

Drawn by J. Bell.

Engraved by E. Mitchell.

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future inquiry; This tumor alſo proves how little there is peculiar in the action by which tumor is engendered; the peculiarity is in the part; the veſſels of the ſkin will ſecrete ſkin to all eternity, the veſſels of bone will ſecrete bone.

On the laſt day of December 1798, GEORGE EDINGTON, a hale ſtout young man, was urged by his wife to go out and ſeek a relation of her's, a carrier, who was miſſing. He got on horſeback in a night extremely cold, dark, and tempeſtuous, with drifting hail and ſnow. After riding onwards about three miles, he found the carrier drowned in a brook, (the mill-burn) flooded with the ſtorm: his cart was overturned in the brook, and his head lay under the ſhaft, his body being preſſed down by the weight of the cart into the channel of the river; the horſe ſtill lay on its ſide, ſuffocating, and ſtiffened with cold.

Edington proceeded, with the help of a friend who had accompanied him, to diſengage the horſe, and raiſe up the dead body: they firſt cut the harneſs and lifted the cart; the horſe, meanwhile, benumbed with cold, ſtruggled to riſe, ſtaggered forward, and fell: Edington's horſe mean while got looſe and run off, and his friend purſuing the horſe, left the whole load of the cart upon him: Feeling himſelf thus entangled and overloaded, he made a violent effort, and being a very big and uncommonly powerful lad, he raiſed the cart, when the horſe ſtruggling again to riſe, ſtaggered forward, fell upon him, broke his leg acroſs, and with the weight of the horſe he was thrown down into the channel by the ſide of the dead body; in this ſtate he was found by his friend upon his return, lying under the horſe.

When relieved from this condition and raiſed up, he found his leg entirely broken, and ſo twiſted, that the toes were turned entirely round, with excruciating pain: His companion ſet him upon his own horſe, and while he ſat there pulled the leg, and turned round the foot into a more natural poſture; but not without violent exertions, and very great pain. He then travelled onwards thus on horſeback two miles, called up the people of the alehouſe, where probably the carrier had been intoxicated, and while his friend raiſed the people of the village, and went out to bring home the dead body, he was laid in a cart with ſtraw, and carried homewards, in excruciating pain, and with his limb enormouſly ſwelled.

The ſurgeon came next day, and ſet his leg, which was fractured a few inches below the knee: it knit in about ten weeks; he then began to walk about the doors, and to go the length of his workſhop with the help of a ſtick. I doubt not he had gone too early abroad, and uſed too much freedom with his limb, for I find that he had been actually employed in the workſhop, and had in the twelfth week cut

his ancle with an adze. He ſtill felt pains in the fractured parts, in the knee, and all along the bone to the ancle. The ſpongy heads of the tibia and fibula, about two inches below the joint, were the parts fractured: there appeared firſt a degree of roundneſs and fulneſs about the part, then a knottineſs and irregularity, and from this time began that tumor which is now of enormous ſize.

His limb was, notwithſtanding the tumor and pain, ſo firm and vigorous that he could, with the help of a ſtick, walk a journey of ten miles, but with ſuch excruciating exacerbation of the pain that the ſweat poured from his forehead. The pain was thus excited by exerciſe; but from the moment in which his leg was broken, it never ceaſed, even while laid in bed. (When at any time (as his buſineſs has occaſioned frequent accidents,) he has ſlipped his right foot, and borne up the weight of his body upon the left, he has felt the ſhock with dreadful pain.

After the bony growth encircling the upper part of the leg had attained a very great ſize, he remarked, that the general thickening and knottineſs concentrated itſelf into a particular tumor, very ſmall, gradually increaſing, ſeated upon the inner ſide of the head of the tibia, ſoftiſh, griſtly, not moveable, but inſeparably connected with the bone, and riſing apparently from its ſurface. In this tumor the changes of the weather were particularly felt; it was ſometimes extremely painful, never entirely void of pain. Unfortunately it happened, that ſoon after this ſofter tumor appeared, he one day, in riding to viſit his ſurgeon, with the deſign of ſhewing him this tumor: while his horſe was going down a ſteep hill, he ſtopt to button himſelf up againſt a ſhower of ſleet and ſnow; but he had no ſooner dropt the reins on his horſe's neck, than it fell forwards; he was thrown directly forwards, and though he was not conſcious of his leg having ſtruck the ground, he felt the ſhock very ſeverely, and before he arrived at his ſurgeon's a ſwelling had ariſen over the great bony tumor, ſo large, and ſo general, as to conceal entirely that cartilaginous ſwelling about which he meant to have conſulted his ſurgeon: from this time he was more pained, more lame, more expoſed to attacks of fever, the tumor increaſing ſenſibly, though ſlowly, from day to day.

The tumor had attained a very great ſize when, in the third year, it ſuſtained another ſhock: In ſtepping acroſs a drain in a ploughed field, the looſe earth on its bank gave way, the right leg, with which he made the ſtep, ſlipped, and the left leg, the diſeaſed one, ſuſtaining the whole weight of the body, bended at the knee, and folded under him with great pain, accompanied with a ſenſe of crackling as if ſomething had given way; a feeling which he never failed to perceive,

more or leſs, whenever at any time his foot ſlipt. From this time the cartilaginous and bony growth ſeemed to acquire new vigour, and increaſed very rapidly. For three years had he ſuffered conſtant dull pain; every accidental ſtrain or imprudent exertion, bringing upon him a ſevere exacerbation, when he came to town and put himſelf under my care. The tumor had then attained to the ſize of his hand, and, though it belonged ſolely to the ſpongy ends of the bones, (the tibia and fibula,) it covered entirely the knee-joint, none of the marks of which could be diſtinguiſhed, except the patella at the upper part of the tumor. I intreated him to allow his leg to be amputated, and ventured to prognoſticate that he would never have one happy hour; that the tumor would never ceaſe to grow; that the limb would become a cumbrous load; that he would loſe his profeſſion, and by confinement and pain endanger his health. He argued his youth and ſtrength, and the various accidents which might bring him relief, and returned home.

It was now, at this period, in the fourth year of the tumor, and, after the ſecond fracture, in examining the condition of the parts, I made the following notes in my Caſe-Book: "The knee-joint, though not without ſwelling, is free from diſeaſe; the patella lying diſtinct and moveable behind the upper part of the tumor. The head of the tibia is at its upper and moſt ſpongy part, where it receives the tendon of the extenſors, greatly enlarged: the head of the fibula is at once enlarged and removed from its place: the tumor is of a very great ſize, bigger than the head, entire on its ſurface, ſlightly red, and ſtreaked with large blue veins; it is chiefly a bony tumor, formed in common from the heads of the tibia and fibula, and covers and ſurrounds the fractured part of the bones. The whole tumor has that firm elaſticity which diſtinguiſhes all ſuch anomalous tumors as are partly gelatinous and partly bony; and, upon examining more curiouſly, we can diſtinguiſh parts firm as the hardeſt bone, other parts are more ſoft and yielding, and the whole conveys to the imagination of one accuſtomed to diſſect ſuch tumors, a perception of its nature, for it manifeſtly is formed, not ſo much of maſſive bone, as of large flat oſſifications, which, together with cartilaginous lamellæ form its general walls; while the center of the tumor conſiſts of various cells, containing pus, and gelatinous matter, but its center and baſis, where it ariſes from the tibia and fibula, conſiſt of almoſt ſolid bone. A ſofter part, like a ſac, covered with a ſort of cartilaginous coat, and containing a gelatinous fluid, partly purulent and, I doubt not, partly bloody, is prominent from the higheſt point, and extends, I am perſuaded, to the center of the tumor, and the prominence of this part foretels the approach of the laſt and fatal

ſtage of open ulceration, a fœtid and terrible diſcharge, in ſhort, an open caries and hectic. But he ſuffers leſs of late, there is more lameneſs and weakneſs than pain; the pain is of late abated, and what he feels, in place of being concentrated in the tumor, runs along the line of the tibia, and ſtretches down the leg.

In ſhort, this tumor, we may venture to ſay with the profane knight, "we know as well as if we had made it." It is a tumor firſt produced by the callus, which ſhould within eight or ten weeks have taken a decided and limited form, having been kept by repeated accidents in a ſtate of continual excitement and permanent growth. The bone being once enlarged into a tumor, the continued extenſion of its ſubſtance, and the high vaſcular action, has produced, in various parts, partial ſuppuration, and formed irregular ſacs and cells: and when, as the diſeaſe advances, thoſe cells and cavities have been ſtill farther extended, the ſurface will become thin and inflamed, and burſt out into open ulceration. Then the horrible fœtor of the ulcer, the continual pain and the loſs of health, will leave the patient no choice; and make him regret the utter loſs of time in the beſt years and very vigour of his life.

After a long abſence, he is again returned to aſk my advice. It is now five years ſince I have ſeen this tumor, and it is ſtill a tumor,—ſtill entire,—not ulcerated,—not more painful,—nothing different in form from what it was, but enormouſly increaſed in ſize; ſo that for the drawing taken in the year 1802, when the tumor equalled the patient's head only in bulk, I ſubſtitute that taken at this preſent period, November 1806, when it more nearly approaches to the ſize of his body. Edward Edington is a big and luſty man of about 40 years of age, ſix feet high, coarſe and bulky, and the tumor, which I am ſorry I have neglected to meaſure, bears this proportion to the reſt of his perſon which I have here repreſented: the knee is ſtill unaffected, and bends eaſily, the leg, though ſhortened by the fracture in the middle of the thigh, is ſtrong and able to bear the weight of the body; but the weight of this enormous maſs it ſeems hardly able to bear, and is ſo encumbered, that he moves, or rather drags it very ſlowly. That part of my prognoſtic which I imagined the moſt certain, has failed, viz. that the tumor would in not many months burſt out into a horrible and fœtid ulcer;—that which ſeemed leaſt probable is fulfilled, viz. that the tumor, however long he deferred amputation, would never ceaſe to grow. The chief accretion of ſubſtance ſeems to be of ſolid bone, and the tumor and the limb ſeem to be extremely ponderous. I have once more tried to perſuade him, that, to allow of amputation now, is to ſave ſtill ſome



Drawn by J. Bell.

Engraved by E. Mitchell.

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GEORGE EDINGTON.

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of the moſt precious years of his life; his ſpirit is broken, and he begins to fall back in the world, and yet is ſo infatuated as ſtill to hope for relief, when the moſt prominent part of the tumor, which now threatens to burſt, is opened. He urges me to ſtrike the lancet into it: but, aware as I am of the ſtate of horrible ulceration, and hectic which muſt then enſue, I have firmly refuſed to do him ſo irreparable an injury, and again he is gone home to linger on in miſery and increaſing poverty.

From this caſe, what do we learn? That bone, ſolid though it be, is a ſecretion as eaſily and as rapidly formed as that of ſkin, and generates a tumor more permanent:—that fracture is a ſpecies of injury not to be repaired, like the laceration of ſoft parts by adheſion, but by the generation of new matter; that the generation of this new bony matter, or callus, is produced by the excited action of the veſſels of the bone, ſo that if thoſe veſſels be kept in a ſtate of excitement by frequent injuries, or, in other terms, by frequent leſſer fractures or lacerations of the internal ſubſtance, it will continue to be ſecreted without bounds, and, become in place of a natural cure, a moſt incurable diſeaſe: that the bony ſecretion which is uſually limited by the occaſion, and ceaſes when the integrity of the parts within is reſtored, may be perpetuated by occaſional violence, as in this inſtance it was by a ſucceſſion of ill accidents ſo perpetuated: that a ſucceſſion of blows and other injuries after ſuch a tumor is formed, excite and ſupport the action by which it was generated, and give a new vigour to its growth, juſt as the ill-adviſed ſtimulants and tinctures of a quack, haſten the growth of the moſt indolent tumor, and hurry on cancerous diſeaſes to the ſtage of ulceration, or as a blow upon a hydrocele enlarges the tumor by at once increaſing the watery ſecretion, and thickening the coats. It is particularly worthy of your obſervation, that a tumor rarely continues inſulated, but draws into conſent the neighbouring parts, and ſpreads the accelerated vaſcular action along the contiguous membranes: this is the reaſon of gelatinous ſacs being added to ſuch bony tumors; for the ſheaths of the tendons, the burſæ, and, in this inſtance, the ſtrong ſheaths of tendinous aponeuroſis which ſpread themſelves from the tendons of the gracilis and ſartorius, and cover the knee-joint, ſurrounding completely the heads of the tibia and fibula, enter into the diſeaſe, become an integument to the tumor, which had thence gelatinous abſceſſes and cartilaginous concretions engrafted upon it. Thus does the tumor of a bone affect the ſurrounding parts, juſt as a glandular tumor affects the ſkin which covers it.

" JAMES HALL, a groom, about 40 years of age, a good, ſober, and valuable ſervant, was firſt ſenſible of the very extraordinary tumor which I have repreſented in this drawing, about five years ago: it was occaſionally the ſubject of good-humoured jokes among his fellow-ſervants, who ſaid James would ſoon be a luſty fellow, ſince he began to have the double chin; but he had all along very unhappy preſentiments, for he was conſcious that ſomething very different, perhaps very dangerous, occaſioned the ſingular appearance they obſerved."

" In queſtioning a patient about the origin of his complaints, you rarely fail to hear of ſome cauſe, real or imaginary, to which the malady may be imputed. His apprehenſion is, that violent ſore throats, with which he has been periodically attacked from his boyiſh years, and which often ſuppurated, have been in ſome way the occaſion of this diſeaſe. It was after one of thoſe febrile ſore throats, that his chin began ſlowly to enlarge, but it ſeemed merely an increaſe of that ſecond fold of ſkin, which conſtitutes the double chin; it was altogether void of pain, it ſeemed a mere elaſtic colourleſs ſwelling of the ſkin itſelf, nor could he perceive within the thickened ſkin any particular gland or kernel ſwelled or hardened. It has ſlowly and imperceptibly increaſed for five years, and has now attained the monſtrous form expreſſed in the Drawing."

Though the whole tumor is monſtrous, it is difficult in words, or even by drawing to expreſs this, ſince it has not any marked form, nor any thing ſingular to attract notice, except its bulk. It ſeems one general and diffuſed thickening of the ſkin, glands, and faſcia, beginning under and around the jaws, extending from ear to ear, and now affecting the neck and breaſt down to the nipples. The ſkin of the cheek and jaws, in all that part on which the beard grows, is amazingly enlarged; but this, as alſo all the tumor extending over the neck and breaſt, is quite moveable, and indeed ſoft. The proper ſkin being pinched up, is felt to be thin, natural, and moveable, having pinched up the proper ſkin, and aſcertained that it, and its moſt immediate cellular ſubſtance, is not the ſeat of diſeaſe, I pinch deeper, and find, that the cellular ſubſtance nearer the faſcia, the faſcia itſelf, and the cellular interſtices of it, and eſpecially the cellular ſubſtance in which the glands are involved, is the ſeat of diſeaſe: all this cellular ſubſtance is exceedingly thickened; though ſoft and woolly, it ſeems maſſy; but the cellular ſubſtance and faſcia, involving the ſalivary and lymphatic glands encircling the jaw, are ſo thickened, that the glands can no longer be diſtinctly nor individually felt, though it can be diſ-

tinctly perceived that they are all enlarged. I feel each parotid gland immediately before the ear enlarged to a ſoft and pulpy maſs: a ſoft flaccid ſort of individual ſwelling, conſiſting plainly of the enlarged parotid forms at each ear, the general tumor; and the ſame ſoft and maſſy tumor, heavy but moveable, is continued all round the circle of the jaws, without one hard kernel or individual knot; without a regular baſis or any thing to define its bounds; without any thing that you could (if in ſuch a ſituation the thing were poſſible,) circumſcribe with an inciſion: the glands of the neck, the glandulæ concatenatæ, I diſtinctly feel through a thickened ſkin and cellular ſubſtance greatly ſwelled; not as in thoſe affected with ſcrophula, with a hard and kernelly, but with a ſoft, flaccid, woolly ſwelling, quite unlike the knobby feeling with which we are accuſtomed. The cellular ſubſtance ſurrounding the glands ſeems thickened, and the glands themſelves are enlarged. The whole chain of the glandulæ concatenatæ forms a maſs continuous with that which ſurrounds the chin, and embraces the whole neck and throat. The ſkin over the pomum Adami is now thickening; the ſame puffy yet ſolid thickening of the ſkin, begins to affect the ſkin of the breaſt; the right mamma is already remarkably enlarged, and the left threatened with enlargement, ſo far does the tumor extend downwards: nor does it terminate above in the parotid glands, nor at the ears; the ſwelling, on the contrary, of thoſe lymphatic glands which lie behind the ears upon the maſtoid proceſſes, prolong the tumor almoſt round the head and neck."

"From the parts affected, and the form it aſſumes, ranging round the jaw and running along the ſides of the neck, affecting the chin and throat in a particular manner, and affecting even the mammæ, we can have no doubt of the relation of this tumor to the glands. But this tendency to ſwelling in the glands, had very early and unuſually affected the cellular ſubſtance and faſcia: had the diſeaſe affected the glands ſolely, the tumor would have aſſumed a more decided form; had it affected the cellular ſubſtance and faſcia chiefly, the glands, of their natural ſize, would have been no longer diſtinguiſhed; by affecting both, the glands, faſcia, and cellular ſubſtance are all maſſed together in one general tumor. But it is gratifying to be able to prognoſticate, eſpecially when our prognoſtic is in favour of life, and, in this caſe it is plain, a general growth being the cauſe, that relaxation proportioned to that growth will all along precede it, as is the caſe in gôitres and all other glandular enlargements, where ſkin, glands, and faſcia all grow with an equal pace. When an individual gland, (as the ſublingual,) is excited to grow, and is bound down by muſcles or membranes not forming its immediate coats, theſe, not being

ſubject to the vaſcular action which enlarges the gland, do not relax, do not ſuffer the gland to project in proportion as it enlarges, but become tenſe and preſs the gland inwards till it turns the tongue backwards into the throat, or renders the jaw-bone carious, or compreſſes the throat, interrupting reſpiration: but in a tumor like this, where the integuments as well as the gland grow, the pendulous poſture, the extenſion, and the actual growth prevent preſſure inwards, ſo that let it grow to what ſize it will, there will, in this caſe, be never any ſtricture or ſuffocation: thus it uſually happens in hydrocele, that the ſcrotum and vaginal coat do not grow as rapidly as the ſerum is effuſed, they are thence tenſe and ſhining; but in very many caſes I have obſerved the ſcrotum and tunica vaginalis to grow faſter than the effuſion is poured out, the ſac is never full, the ſcrotum never tenſe, the tumor always flabby and flaccid; I have ſeen very often ſuch a hydrocele grow to the ſize of a child's head, the tumor being ſtill ſo flaccid that you could make the points of your fingers meet in compreſſing the hydrocele at any part: from what cauſe it happens I know not, but theſe very flaccid hydroceles are the only ones I have ever obſerved to diſappear ſpontaneouſly, or by the help of ſtimulant embrocations.

Thus we perceive, that of whatever nature the part is in which a moderate but increaſed excitement of the vaſcular action takes place, be it ſkin, or bone, or gland, or cellular ſubſtance; whatever the nature of the original excitement, a flaſh of lightning, a fracture, a fall, repeated bruiſes or ſtrains, or ſome diſorder more natural to the part, increaſed nutrition enſues, correſponding in all reſpects with the natural, except in its exceſs; and, when we conſider how unceaſing the natural proceſs is, and how unremitting the depoſition of new parts, we cannot wonder at any variety in this peculiar ſecretion, or any exceſſive growth.

It is, I believe, a matter of no ſlight importance, towards the clear and orderly proſecution of this ſubject, that we attend to a diſtinction moſt natural and eſſential, betwixt tumor and ſwelling; for, while the former is a mere exceſs of growth, ariſing from excited but healthy action; the latter is a ſudden and violent action of the veſſels, tending to deſtroy the ſtructure of the part: in the latter, in ſwelling, viz. the augmentation of bulk is too ſudden to ariſe from increaſed nutrition, too painful to be conſiſtent with the healthy ſtructure: when, by a blow, fall, wound, or burn, or by any diſeaſe, ſudden ſwelling ariſes, accompanied with pain, the vaſcular ſyſtem of the part acts with deſtructive violence; the veſſels themſelves are gorged with blood, blood alſo or ſerum, or both, are extravaſated into the cellular ſubſtance, the blood veſſels are ſuffocated, and the high action repreſſed by

thoſe cellular effuſions; thus high vaſcular action cauſes effuſion, and the diſeaſe is, in one ſenſe, its own cure: either the effuſion is ſuch as may be abſorbed, and then we ſay the inflammation is reſolved; or it is permanent, the effuſion being ſuch as cannot be abſorbed, and then the part ſuppurates: thus the peculiar forms or conſequences of ſwelling are merely determined by the ſtructure of the part; if the effuſion is of ſerum, ſurrounding a joint, the ſerum is uſually in the courſe of time abſorbed; but, while the ſwelling is ſubſiding, the faſcia and cellular ſubſtance are thickening round the joint, and the joint ſtiffening; ſo it is in ſevere rheumatiſm;—if of blood mixed with ſerum, effuſed deep among the cellular ſubſtance, and on the lower ſurface of the ſkin, the tumor cannot be reſolved, but by ſuppuration, or deſtruction of that cellular ſubſtance and ſkin;—if blood be more violently and univerſally injected into the ſkin, and into that cellular ſubſtance which immediately conveys its blood-veſſels to the ſkin, the colour of the inflamed part is deep red or purple, as in eryſipelas, carbuncle, plague-buboe, and hoſpital ſore; the ſtructure of the part is irrecoverably hurt, the action of its veſſels totally ſuppreſſed, and the inflammation terminates in gangrene, or ſloughing of the ſkin.

But when a blow or other injury has cauſed a ſwelling of the eye, the breaſt, the teſticle, if the firſt effuſion is only in part abſorbed, if the firſt violent action of the veſſels ſubſides a little, but ſtill continues above the ſtandard of health, and continues uniform and regular, the healthy function of nutrition is not interrupted but promoted, and the part continues increaſing in ſize, and becomes a tumor. Betwixt ſwelling and tumor then, there is all the difference that there is betwixt health and diſeaſe: ſwelling is that kind and degree of injury which threatens to deſtroy the part; it is high vaſcular action, accompanied with effuſion, and terminating in ſuppuration, or gangrene; ſometimes, however, it is reſolved, ſometimes it terminates in a thickening of the part, ſometimes in tumor: but tumor is a mere increaſe of bulk, by the ſlow and regular proceſs of nutrition, uſually void of pain, or any uneaſy feeling; if the tumor becomes diſtreſſing, it rather is from weight or preſſure than pain; if dangerous, it is by lying heavy upon the adjacent parts, and cauſing caries in the bones, or ſuffocation, or interruption of other vital functions; if it becomes in itſelf a diſeaſe, it is from pain, ulceration, and other changes moſt natural in the latter ſtages of every tumor; for whenever there comes ſuch high vaſcular action as tends to break up the ſtructure of a part, that violence of action is evinced by pain, and our body ſeems formed thus ſentient, not to torment and afflict, but to preſerve and ſave us, to intimate to us the approach of

danger, that, being alarmed by the firſt feeling, and ſubdued by continuance of pain, we may ſuddenly avoid danger, or ſubmit willingly to thoſe neceſſary privations, and ſalutary pains, which medicine and ſurgery impoſe.

But it is not to be imagined that the vaſcular action which occaſions tumor or preternatural growth, excited at firſt by a bruiſe or fracture, and working and increaſed ſecretion of nutritious parts, can be limited in a body ſubject to ſuch various influences, to ſo many natural and ſo many violent changes, that ſuch vaſcular action, when once excited and become permanent, ſhould continue as invariable and regular as the ſtrokes of a pendulum, or the movements of a perpetuum mobile, or even as regular as the natural degree of action! That the arteries of a part, after having begun to act too powerfully, ſhould continue for years to adminiſter nouriſhment in an increaſed ratio, without aſſuming any new or more violent action, without running into ulceration, is impoſſible: do we not ſee how various accidents, as cold, or mechanical injuries, or imprudent applications, excite in a tumor a new and inflammatory action? Do we not ſee that it is the fate, eſpecially of glandular tumors, to undergo ſuch change ſooner or later, and that uſually in the moſt unpropitious circumſtances, viz. when the ſtructure is materially changed, the cellular ſubſtance much filled up, the ſubſtance of the gland itſelf compreſſed and condenſed, its ſecretion interrupted, the ſkin, the moſt vaſcular and ſenſible part of the body, cloſely connected with the diſeaſed gland, and forming one maſs with it, and all the veſſels of that maſs ready to aſſume the moſt intenſe action, and incapable of finding any relief by a new effuſion into the cellular ſubſtance. Thus each portion or particle of ſuch condenſed and diſeaſed ſtructure no ſooner enflames than it falls into gangrene, and this inflammation from the ſurface where the ulceration begins, penetrates to the more central parts with a foul, fetid ulceration, diſtilling a thin ſerum only, and generating, in fact, an animal poiſon capable of propagating the diſeaſe. Indeed it appears to me, that, would phyſiologiſts but reflect more minutely upon the gradual and ruinous changes which have taken place in the ſtructure of a glandular part, before it falls into ulceration, they would not wonder at that complexion of the ſore which conſtitutes cancer.

Another intereſting circumſtance, well deſerving our notice, is, the long endurance of vaſcular action once excited, and the alteration of a ſtate of mere growth, with a ſtate of active inflammation and ulceration, the one action riſing after the other in occaſional paroxyſms, ſometimes ulcerating and waſting the parts. In phyſics, the moſt trivial, as well as the moſt extraordinary phenomena, deſerve our

notice, and often the moſt ordinary are the moſt inſtructive; they are indeed the leaſt attended to becauſe they are common, and becauſe the effect ſometimes follows the cauſe ſo obviouſly, that we ſeem habitually to underſtand their relation, and all the analogies which, from being a circumſtance which ſhould blunt our curioſity, is a reaſon above all others for applying ourſelves in a ſpecial manner to underſtand ſuch facts; for there ſome common law of nature is implied. It ſeems a law of the animal economy, that the degree of increaſed action which cauſes growth, is near akin in degree or in nature to that which cauſes ulceration: It ſeems too, as is illuſtrated in the caſe of hemorrhagy, cutaneous eruptions, and old ulcers; in a chronic inflammation, as in the chronic rheumatiſm, ophthalmia, or ſore throat; in the caſe of a joint, or any other part once inflamed by violence, and but imperfectly recovered, that veſſels once accuſtomed to high action, continue irritable, and prone, upon the ſlighteſt injury, to renew the action. I ſhall lay before you a general caſe, where the exciting cauſe and the violent vaſcular action viſibly and inſtantly follow each other as the ſtroke does the flaſh;—where the vaſcular action is ſo rapid, that we ſhould expect it inſtantly to expire, or inſtantly to deſtroy, but where it nevertheleſs deſtroys only in part, returns in paroxyſms, and continues for years!—When the action which conduces to unnatural growth continues, as the permanent condition of the part, while that more exaſperated action which cauſes ulceration riſes above it at times! Where the effects of excited vaſcular action are demonſtrated on ſo magnified a ſcale, and are ſo obvious, that the phænomenon more reſembles a phyſical experiment than a diſeaſe. The tumor or ſwelling produced by froſt-biting, is the example I mean: The phenomena of froſt-biting, though often mentioned, are never deſcribed: for this reaſon, I tranſcribe the following conciſe caſe from among many of poor unfortunate creatures who were in one inclement ſeaſon under my care.

" John Gowan, a man of about thirty-ſix years of age, being a hind with a farmer, in the pariſh of Mid-Colder, was employed in a winter of ſevere froſt, with the other ſervants, in digging ſheep from under the drifted ſnow. With the help of ſix of his fellows, he dug a whole day among the ſnow, from morning to night-fall, and ſaved about ſeven ſcore of ſheep, eighty alive and the reſt dead. Theſe men began their labour on a ſunday morning, and before night all the party felt the effect of the froſt-biting.—Three or four of the party were ſo benumbed, that they knew not for long whether they ſtill had feet and hands; but froſt-biting is a very different matter; it is the effect of the high ſtimulus of heat,

after ſevere and long continued cold. Thoſe who were thus benumbed only, without being injured, were probably prevented from approaching the fire; Gowan alone, ſitting by a turf fire, which they had kindled on the ground, put his feet cloſe to it: He firſt felt the fleſh creeping and tingling, but as yet his feet, though they ſeemed heavy and powerleſs, ſo he could not lift them from the ground, were not ſwelled. Next, ſitting ſtill cloſe by the fire, his feet began to ſwell groſsly, to uſe his own homely expreſſion, like bannocks *: Next, and that in leſs than a quarter of an hour after this ſwelling, the fire, which had been hitherto only agreeable, produced a tingling ſenſation perpetually riſing towards actual pain: Next, the pain, hitherto indiſtinct, prickling, and ſtounding only occaſionally, grew more violent at every throb and pulſe of the arteries, and in a quarter of an hour more, he became ſenſible that the fire increaſed the pain, and withdrew his feet from the fire, but the pain became notwithſtanding intolerable, and made him almoſt cry out: In this condition he got home, and threw himſelf into bed, where the pain raged like fire all night, a hot tormenting pain, and next morning the ſwelling was ſo great, that each of his feet would have filled his hat! They were like clods, quite ſhapeleſs, puffed up, very livid in the extremities, and red up the leg. On the third day his feet, as he expreſſes it, *broke*, the roots of the toes ulcerated, and became quite black, with a horrible fetor."

"It would ſeem to me, from this ſuite of the phænomena, that the high excitement on the ſurface brought much blood into the whole member; that the vaſcular action, though inflammatory on the ſurface, where the excitement of heat was directly applied, was not ſo in the central parts of the foot; that the action ſo highly excited at firſt, and which is uſually ſtopped by ulceration, never ſubſided in this caſe, becauſe of the ulceration and gangrene being ſo very partial and limited, but continued in a moderate degree, whence the firſt and violent *ſwelling* had become a permanent tumor, ſubject to occaſional ulceration. His feet are now like camel's feet, and it is manifeſtly impoſſible that feet ſo monſtrouſly ſwelled and deformed ſhould ever ſubſide again into their natural ſhape: They have not, for five years, ſubſided in the ſlighteſt degree, nor will they ever. They are large, irregular clod-like maſſes, fitter each of them to fill his hat than his ſhoe, and this is permanently his condition: Each foot is a round, ſhapeleſs, heavy

* A coarſe big roll or ſhapeleſs loaf of meal and bran, prepared for ſhearers and farm ſervants in Scotland.

maſs, the ſkin of a dark red colour, the ulcerations about the roots of the toes horribly fœtid. The bones of both great toes have been exfoliated, and all the leſſer toes are diſtorted, disfigured, and almoſt buried in the general ſwelling: from time to time, the feet ſwell alternately, with agonizing pain; firſt one ſwells, then, having walked more upon the other, it alſo ſwells; the pain in theſe paroxyſms is dreadful, eſpecially during the night, when warm in bed, and the affected foot throbs and pulſates, as he expreſſes it, like the heart, and becomes ſoon ſo intolerably painful, that he ſtarts out of bed, and, by ſwinging the foot backwards and forwards in the cool air, procures ſome relief:—His feet have both of them been invariably increaſing in ſize, with each new impulſe of blood, and paroxyſm of inflammation: for five years they have been growing; he has been four ſucceſſive times received into the hoſpital, at each return he has remained a month or more, and at each return I find his pains more agonizing, the colour of the inflammation deeper, the ulcers more numerous and fœtid, conſuming toe after toe, in the fleſhy parts, till the blackened bones have dropt out. In ſhort, froſt-biting, as exemplified in this caſe, has nothing of the character which I imagined when firſt I read of it in books, viz. an immediate and partial gangrene ending in ſloughing of one toe or more; it is, on the contrary, a general and a permanent diſeaſe; ſtill increaſing, the parts periſhing ſucceſſively, by new and violent inflammations, terminating in fœtid, painful, livid, and gangrenous ſores: nor is this the peculiar aſpect of this man, Gowan's caſe, but the general character of the diſeaſe.

Gangrene is ſaid to conſiſt in the exhauſted excitability of over-excited veſſels, and the blackneſs to be the conſequence of the death of parts; but the blackneſs precedes the death; the change of colour is not really to blackneſs, it is livor, from extravaſated blood; the blood extraſavated through all the ſkin ſuffocates the veſſels, and ſtops their action, and when all vaſcular action is thus interrupted the part dies. In the caſe before us, the vaſcular action exiſts only in the ſurface; in a bruiſe or fracture it takes place through all the member; in this preſent caſe the gangrene is of courſe partial and ſuperficial, in that other it is univerſal; the one diſtinguiſhed by the title of gangrene, the other by that of ſphacelus.

Some facts, illuſtrating very curiouſly this doctrine of tumors, I might be inclined to mention, but that they are commonly known; the practices, for example, of rude and barbarous nations, who procure, by artificial means, an unnatural bulk of various parts of the body; of the noſtrils, which they enlarge by hanging on the ſeptum of the noſe ponderous rings of copper; of the lips, which they perforate

and enlarge by dilatation, till they are capable of receiving large ſhells, or pieces of ivory like drumſticks; of the ears, which they extend by like means, till they flap, like an elephant's, upon the ſhoulder and breaſt. Other arts alſo known to ſavage nations, and reported by claſſical writers on our ſcience, not as I feel they ſhould be in terms of reprobation, I might be induced to mention, but it could only be in the language and terms in which I have read them *. I decline deſcanting on what is merely curious and far from modeſt or decent, to return to ſimple obſervations or plain facts.

The growth of tumors, and the ulceration, gangrene, or other malignant appearance of the ſores in their latter ſtages, far from implying, in all caſes, ſomething peculiar in the mode of vaſcular action, or ſomething virulent or viſcid among the

* De quibuſdam partibus natura tenuibus incraſſandis atque magnificandis.

In hoc tractionis genere non ſolum arte emaciatæ partes continentur, ſed, quæ natura breviores, et tenuiores ſunt effectæ, continentur quoque; et partes decurtatæ aliquo caſu, vel ægritudine, vel ſectione, et vulnere, qui omnes affectus cum pendeant à diminuta quantitate infra id, quod eſt ſecundum naturam; ideo curatione aggredi debeo. Partes ſupra modum auctæ lædentes actionem, requirunt eandem curationis rationem, quia ſupra naturam ſunt. Sed primum de tenuibus partibus, atque brevibus a naturæ defectu genitis, non demaciatis, agamus. Inter quæ primum locum obtinet cholis, vel pudendum, quæ, ita breve eſt, ut turpitudinem non levem faciat in compoſitione corporis humani. Hoc non tractant recentiores, quia honeſtius factum genus hominum non videtur nudum, ut antiquitas quando in paleſtra, et balneis continuo invicem videbantur. Verum hæ partes, cum jam tectæ ferantur, turpitudo ceſſit loco, et ideo de hac non tractare debemus, neque enim videtur pertinere ad medicum qui ornat, ſed ad eum, qui curat. At quia hæc prætermittuntur a practicis, ideo ego de magnificatione cholis aliquid tradam. Si pulchritudo requiritur, pro pulchritudine tradam. Sin minus cum Avicenna me excuſatum habeant ſeveri iſti, et tetrici viri, qui dum vult docere modum magnificandum cholem, cum turpe videatur medico de his agere, reſpondet huic objectioni, que tanta eſt neceſſitas conſervationis ſpeciei, qui obſcænorum et habenda eſt cura, nam niſi pudendum conſtringatur a vulva, voluptate non afficitur mulier, non emittit ſemen, nec fit conceptus, ideo arte craſſum faciendum membrum hoc. Ego moneo parentes, ut ſtudeant in ætate infantili, ut magnificetur membrum puerorum, magnum etenim inutile nunquam erit, et ſi fuerit inutile hoc rariſſime accidet, quum enim nimis longum erit, ſolet uterum contundere, et os matricis, et impedire generationem, nimis autem breve, aut ſemper aut frequentius incommodum erit, de magnificando igitur agamus; in hoc autem duo obſervanda ſunt, et quod poſſumus producere pudendum, et quod poſſumus craſſius reddere, producimus quum facimus in longum creſcere; augemus vero, ſi efficiamus multam et frequentem extenſionem non niſi augetur augmento pinguitudinis, et carnis, ſed opartet, ut nervi cavitas fiat major, nam quoties cavitas ampla facta fuerit, et protuditur membrum et adſint vapores, ac ſpiritus creſcit primum autem loquamur de longitudine. But my readers have enough of this; and all the reſt is in the tone of that converſation with which Sir Robert Walpole is reported to have amuſed his gueſts after dinner, as being on the level of the loweſt capacity.

humors, irritating fibres, obſtructing pores, blocking up glands, and doing various other wonderful things, which phiſiologiſts have deſcribed moſt curiouſly; implies merely certain changes in the vaſcular ſtructure, incompetent to bear the high vaſcular action; and in caſe of growth, certain increaſe of the ſecretion of nutritious particles, and both the permanent growth and occaſional ulceration of tumors, referrible to that ſimple law of the animal econmy ſo eſſential to the preſervation of the whole, viz. "that nutrition is adminiſtered, and the injured particles of the body re-abſorbed by a wholeſome and natural action and re-action of the veſſels, which vaſcular action is accelerated, and the nouriſhment augmented in proportion as it is required;" or, in other terms, according to the excitements of uſe, exerciſe, friction, diſtenſion, or other natural cauſe, according to the fatigue, or violence, or ſlighter injuries to which the part is expoſed. All ambiguity as to the nature of our inquiry is thus removed; all pretenſions to deep philoſophy being renounced; and all reference to the much admired myſteries of inſpiſſation of lymph, of the coagulable parts ſticking in the veſſels and pores, and of obſtructions of glands, which, after all, are but modes of ſpeech, mere figurative language, which ſerves not to conceal ſo much as to demonſtrate our ignorance.

The things we ſee and feel, and which are open to our ſenſes, I ſcruple not to put down among the obvious phenomena of tumor; the increaſing bulk of a part, ſlowly augmented by an invigorated nutrition in a ſolid, or by a more profuſe ſecretion in a hollow part; the incited action of the arteries; the pulſation of the limb throbbing with inflammation; the painful increaſe of ſenſibility proceeding from this new and impetuous influx of blood; the dilatation of the cutaneous veins, by which this increaſed arterial action is demonſtrated; the reddening of the part by blood being at laſt extravaſated, are among the viſible and direct conſequences of high vaſcular action; ſo alſo is the deep purple colour which proceeds from great extravaſation of blood, and prognoſticates gangrene of the part. Theſe are facts within the cognizance of our ſenſes; they are a part of thoſe phænomena which it is our chief duty to obſerve; but that fluids are inſpiſſated, that fibres become rigid, that tubes and veſſels are obſtructed, are circumſtances far removed from the beaten path of plain fact into the regions of fancy. Theſe are ſo entirely the inventions of your dreamers of dreams, who have called them their theories, that with thoſe I take no concern, not even to refute them.

I have not, I think, ſeduced you far into the regions of ſpeculation, either to refute the philoſophical dreams of others, or to eſtabliſh any of my own. I am conſcious, that even in this preliminary ſketch I have been chiefly occupied in narrating facts, and teaching you how you are to obſerve, with ſimplicity and truth, the ordinary phænomena of nature. But I ſhall no longer delay thoſe practical leſſons which are the chief ſubject of all my ſtudies. From the principles which I have laid down may be ſafely inferred two concluſions of no ſlight moment: Firſt, That growth being a proceſs eſſentially the ſame in health and in diſeaſe, in a tumor and in the limb that nouriſhes it, every tumor (except in ſome caſes of rare and unexpected changes of ſtructure, or in the common accident of ſuppuration, &c.) will continue to grow while the blood circulates, and the body lives. Look well, then, to the nature and probable conſequences of every tumor; for a tumor, though void of any character of peculiar malignity, will, if ſeated in the paſſages of the noſe or the throat, on a bone, or in connection with great veſſels or nerves, have all the ill effects of a malignant tumor without being ſo, by bringing caries upon the bones, cauſing diſeaſe and ulceration in the noſtrils, compreſſing the throat, and weaving in its roots with the great veſſels and nerves, and from this univerſal fact reſults this incontrovertible rule of practice, "That no ſuſpicious tumour, ſeated in a dangerous part, ſhould be permitted to grow." Secondly, That almoſt every tumor, though ſeemingly indolent in its nature, has its period of ulceration. A tumor of mere fat, a tumor in which the adipoſe membrane is alone diſeaſed, a ſteatomatous, or an ulcerous tumor in which is collected an increaſed ſecretion, partly fluid and partly ſolid, or purely of fat, is indeed harmleſs, unleſs by its bulk and weight, and when it ſuppurates it ſuppurates mildly: But wherever any part of the body, except the cellular fat or muſcular fleſh is engaged in the diſeaſe, wherever the eye, the breaſt, the teſticle, a bone or a joint; wherever, in ſhort, any part, having a complicated ſtructure, is affected, however long it may have held the character of a mere overgrowth or ſimple tumor, it is ever to be feared, that ſooner or later, its ſtructure will undergo unfavourable changes, from long diſtenſion, from occaſional excitement, from blows or other injuries, and from changes ſeemingly internal and ſpontaneous; or, in other words, from phyſical cauſes which our patient has not remarked, and which we cannot trace. Thence reſults another rule equally eſtabliſhed in my mind, that no tumor of a doubtful nature ſhould be permitted to grow, even through that period in which it ſeems indolent; for when it inflames or com-

preſſes the ſurrounding parts, when it is likely to ſuffocate our patient, or to end in a malignant and fœtid ſore, it is ſo fixed as to defy all ſurgery.

To eſtabliſh theſe inferences by practical examples ſhall be the better occupation of our future hours of meeting, an occupation of infinite importance to our fellow creatures. A patient tortured with ſtone finds life intolerable; one diſtracted with the pains, and waſted with the hectic attending a white ſwelling of a joint, is conſcious of a decline of health, from which he can be ſaved, only by parting with the diſeaſed limb; he puts life willingly to the hazard to ſave life, or to be relieved from pain; but unhappily a tumor ſeems but no more than a deformity, is attended with no pain, and its dangers, whatever they are, are unknown to the patient; he cannot even be made ſenſible of their approach, though his ſurgeon knows that the tumor, which ſeems harmleſs, is to bring on ſuffocation, caries, cancer, or ſome miſerable form of death. By my manner of illuſtrating thoſe principles, and of relating the reſults of diligent experience, I doubt not I ſhall perſuade you that I am truly "glad to teach, and glad to learn."

DISCOURSE III.

OF TUMORS OF THE BONES.

"IT is not by eloquence that one becomes a phyſician, nor by words that diſeaſes are cured." Celſus, eloquent himſelf, meant not to preſcribe eloquence, nor enjoin a ſtern adherence to mere elements and ſimple truths. The oppoſite ſects of empiric and dogmatiſt had diſputed for ages with a degree of fury quite unparalleled; too much thinking had made them mad; they had, with all the vanity of falſe philoſophers, imagined theories concerning digeſtion and the inteſtine motion, and nothing but the abſolute diſſection of the living body would ſatisfy them; they confidently imagined ſuch paultry theories of ſuch high importance as to juſtify any means of attaining the truth; and for this unhallowed purpoſe, they dared to contend ſavagely even for human victims. Not contented with the tranſient and imperfect views which the arena, or the field of battle, or robberies, or murders occaſionally offered, of the human viſcera *; they required that the bodies of priſoners and captives ſhould be delivered to them, and praiſed the cuſtoms of the older times, when Herophilus and Eraſiſtratus obtained of kings that victims ſhould be delivered to them from the priſons, whom they diſſected alive, looking into the viſcera, conſidering the ſituation, forms, and colour of thoſe parts while ſtill in motion, which nature had concealed †.

This is a narrative, ſingular indeed, not merely in reſpect to the hiſtory of our particular ſcience, but in the general hiſtory of the world. Till the time of Celſus no

* Interdum enim gladiatorem in arena, vel militem in acie, vel viatorem a latronibus exceptum ſic vulnerari, ut interior aliqua pars aperiatur, et in alio alia, ita ſedem, poſitum, ordinem, figuram, ſimiliaque cognoſcere prudentem medicum, non cædem, ſed ſanitatem molientem, idque per miſericordiam diſcere, quod alii dira crudelitate cognoverint.

† Cum in interioribus partibus et dolores et morborum varia genera naſcantur, neminem putant his adhibere poſſe remedia quæ ipſe (dogmaticus) ignoret. Neceſſarium ergo eſſe, incidere corpora mortuorum, earumque viſcera atque inteſtina ſcrutari. Longeque optime feciſſe Herophilum et Eraſiſtratum, qui nocentes homines, a regibus ex carcere acceptos, vivos inciderint, conſiderarintque, etiam ſpiritu remanente, ea quæ natura ante clauſiſſet.

one had tried to temper their opinions, or appeaſe their rancour, or ventured to affirm that the phyſician, whoſe acknowledged province it is to know the ſtructure of the body, would learn more from the deliberate diſſection of the dead body, than from the diſſection of a living man, writhing in tortures, and wounded *. It is againſt theſe cruel, jealous, and vindictive ſects that Celſus has directed his reproof. "It is eaſy," ſays Celſus, "in diſputes of this nature, to maintain either ſide, and in thoſe queſtions genius and invention will ever prevail; but diſeaſes are to be cured, not by eloquence, but by medicines †."

The reproof which theſe memorable words are meant to convey, I hope I am intitled to inſcribe at the head of this diſcourſe; for it is not in ſpeculation we have hitherto been occupied, and we now advance to ſcenes of real practice. The greateſt excellency which in our ſcience we can attain to, is to foreſee every contingency, and provide againſt every difficulty; and our art, like every other, depends upon reaſoning and precedents. Facts are the elements and integral parts of every ſcience, and general theories, or rules of practice, are but the ſtrong analogies and relations of thoſe facts to each other. What has already been done we know we may again attempt; we believe we may favour thoſe changes, or excite thoſe actions to which, from the general courſe of facts we ſee nature inclined: But however we may believe that our method of cure or projected operations will ſucceed, we cannot know that they will till experience gives us proof; experience of our own or of others; experience of caſes we have ſeen, or of caſes we find recorded. While our art ſtands, like every other, on precedent, nothing but caſes will illuſtrate caſes, and of thoſe which we receive as authority, and make the rule of our practice, we muſt have not the ſimple reſult ſtated, for no reſult is ſimple in the delicate and impalpable changes which the human body undergoes; we muſt have the narrative, the whole teſtimony, vivâ voce, the fact, and the

* Igitur, ut ad propoſitum meum redeam, rationalem quidem puto medicinam eſſe debere, inſtrui vero ab evidentibus cauſis, obſcuris omnibus, non a cogitatione artificis, ſed ab ipſa arte rejectis. Incidere autem vivorum corpora, et crudele, et ſupervacuum eſt, mortuorum corpora diſcentibus neceſſarium, nam poſitum et ordinem noſſe debent, quæ cadavera melius quam *vivus et vulneratus homo repreſentant*. Sed et cetera, quæ modo in vivis cognoſci poſſunt, in ipſis curationibus vulneratorum paulo tardius, ſed aliquanto mitius uſus ipſe demonſtravit.

† Et in omnibus ejuſmodi cogitationibus in utramque partem diſſeri poſſe, itaque ingenium et facundiam vincere, morbos autem, non eloquentia, ſed remediis curari, quæ ſi quis elinguis uſu diſcreta bene norit, hunc aliquanto majorem medicum futurum, quam ſi ſine uſu linguam ſuam excoluerit.

manner of the fact; the patient, and his diſeaſe, his ſuffering, and his recovery, or the manner of his death, muſt all be preſented to our imagination. General and independent rules, nay, even ſpecial facts, make but a ſlight and tranſient impreſſion on the mind; but a faithful picture of the man and of his temperament; of the progreſs of his malady, and the degree of his ſuffering; of the manner in which he bears his misfortunes, and ſtruggles through the diſeaſe, intereſts us for ever, and intimates to us what is going on within, and excites thoſe reflections and concluſions, moral and philoſophical, which, by habits of repetition, are combined at laſt into general rules. The conjectures which the intelligent phyſician forms in ſilence, while ſuch a ſcene is paſſing before him, where firſt he imagines certain changes likely to happen, leaves his patient with preſentiments of certain ſymptoms ſoon to appear, favourable or unfavourable, and returns to his bed-ſide, with a mind full of anxiety, to know whether his fears or hopes are confirmed, is truly experience: and when he takes his ſhare in forwarding theſe operations of nature, and endeavours, by remedies, to anticipate danger, or to promote ſome favourable change, he performs the higheſt function of his profeſſion, on principles the ſureſt and moſt philoſophical. Much of this kind of knowledge may, I believe, be conveyed by narratives; nor ſhould any one be regarded as at all educated who has not his mind thus ſtored with facts.

But every caſe may be variouſly conſtrued; and the phyſician muſt have learned ſomething from experience before he can have learned much from books. It has been too much the cuſtom for thoſe who have never ſtudied, to judge and decide; for thoſe who have never frequented the bed-ſide of the patient, to form theories in their cloſets, and ſearch for proofs of thoſe theories in books; to thoſe prepoſſeſſed in this degree, and capable of ſeeing only what they look for, the ſlighteſt circumſtance is confirmation ſtrong as proof of holy writ; and many a plain fact miſconſtrued, and many a well-meaning author made to miniſter to theories he muſt have deſpiſed, and ſtand witneſs to facts he never dreamed of. To imagine a theory, (inconſiſtent perhaps with every thing in nature,) and to ſeek thus for proofs in books, is like looking for drawings among the works of artiſts to illuſtrate the ſurgery of fractured ſculls and diſlocated limbs. The ſurgeon wants to find ſuch a drawing of a limb, that he may, by the help of it, repreſent a fractured limb; or of a head, old or young, in ſuch a poſture, that he may, by drawing lines upon it, repreſent the circumſtances of a fractured ſcull: but he finds no limb in the preciſe poſture, no head of the exact form he deſires; and thus

abandons the mean and fooliſh project of ſtealing and diſguiſing a drawing, becauſe he cannot draw; or if he does perſiſt in ſuch deſign, he repreſents only a disfigured and diſtorted limb, in place of a ſwelled and diſeaſed one. In like manner, the tranſcript of a caſe deſigned for any ſignal purpoſe, bears often but a ſlight reſemblance to the original, or to truth; to tranſcribe nature, ſhe muſt be ſtudied; to underſtand the import of caſes, as related in books, correſponding diſeaſes muſt have been obſerved at the bed-ſide of the patient. If an author's theory naturally and ſpontaneouſly ariſes from his facts; if his remarks flow unaffectedly and ſimply from the caſe before him, and are thoſe merely of an intelligent and anxious obſerver of nature; if in place of diſguiſing his theory, he acknowledges, that in conſequence of the natural ſucceſſion of ſymptoms, he was impreſſed with a belief, that certain changes were going on within the body, you know at leaſt how far to agree with his doctrine, and how to value his facts. His narratives may be true and faithful; but if he lays down firſt a ſplendid theory, and proves to you that things muſt happen thus and thus; if he purſues his theory through all its modulations, and proves every particular of his doctrine by facts; his narratives may poſſibly be true, but it is infinitely more probable that they are diſguiſed. One invaluable advantage I feel conſcious of, and it is this, that while a deſire for ſuch knowledge as might enable me to acquit myſelf well in my profeſſion has been my earlieſt paſſion, it has ever been accompanied with a wiſh to invent plain and ſimple ways of inſtructing others; and thence I hope that I know how to ſelect inſtructive facts. I am perſuaded that if caſes are ever to convey uſeful leſſons and documents to the young ſurgeon, their relation to each other muſt be founded on natural and obvious conſiderations; the doctrine muſt be unambitious; the truths that are to be impreſſed, uſeful and practical; and the narrative, plain and ſimple, muſt be compoſed by one who, devoting himſelf ſincerely to his profeſſion, ſits with equal patience by the bed-ſide of the poor and of the rich, and writes down with equal care what is wonderful and what is uſeful; who is accuſtomed to put his own hand to the work, and ſomething of his heart in every act; who, having ſtood reſponſible and felt miſerable, relates his hopes and fears, his ſucceſs, and diſappointments, and errors, with equal candour. In this at leaſt I truſt, all the narratives I ſhall now lay before you ſhall be found true and faithful.

The preſent diſcourſe is devoted to the diſeaſes of the bones; and in conſonance with the method ſuggeſted in theſe reflections, I ſhall firſt ſketch out to you my

conception of thoſe changes which happen in the ſtructure of bone, before it ſwells into a tumor; and ſhall next lay before you the facts in detail, from which thoſe conceptions, true or falſe, have ariſen.

Every tumor muſt derive its peculiar form from the ſtructure of that part of the body from which it ariſes; for it is not ſeated on the part as a new and accidental exiſtence, but is engendered by its veſſels, and is of its actual ſubſtance. Many things conſpire to give the tumor proceeding from a bone a peculiar aſpect; it is always irregular and anomalous, never ſimple. I have rarely ſeen a ſingle bony protuberance ariſing from the head or the ſhaft of a ſingle bone. When a bone falls into diſeaſe, a large proportion of tendinous and muſcular parts, of burſæ and of cellular ſubſtance partake of the morbid action. The bone lies in the centre of the limb, connected by its larger head with the joint, and by its perioſteum with the tendons, burſæ, and muſcles; and all this maſs of parts is ſooner or later affected; and ſince every depoſition from veſſels appointed for the ſecretion of bone is ſolid, and every increaſe of ſuch a tumor permanent, it ſoon attains a great ſize; it is ponderous and maſſive from the proportion of bony ſecretion, and from the various ſtructure of theſe ſeveral parts, it has every irregularity of form and ſubſtance.

When the tumor of a bone has attained a conſiderable ſize, much of the original ſtructure is deſtroyed, and a new irregular maſs of gelatinous and bony matter is ſubſtituted for it. The bony tumor is firm, bulky, and ponderous, but not ſolid; feeling it from without, we can conjecture of what ſubſtance it is compoſed within; we are ſenſible that the tumor is covered by a ſhell, bony in moſt part of its circumference, cartilaginous in ſome parts, and throughout the whole, yielding and elaſtic; we are ſenſible alſo, that within there are irregular points or ſpiculæ traverſing the cavities or cells of the hollow tumor; that theſe are mixed with the cartilaginous ſubſtance, and with irregular collections of matter, partly purulent, but chiefly gelatinous; we are ſenſible of ſuch ſoft cartilaginous and gelatinous parts being ſucceſſively added, in the progreſs of its growth to the tumor, which was at the firſt ſolid and firm; and we find at laſt, by pain and partial ulcerations, and by the increaſe of fluctuation and redneſs at particular points, that ulceration, the laſt ſtage of the diſeaſe approaches; then the limb is effectually ruined, and the patient muſt ſubmit to amputation or die of hectic.

When ſuch tumor is diſſected, we find our ſuſpicions of its internal ſtructure confirmed; we ſee that foul matter flow out, when we open into the center of the

tumor, which we felt but indiſtinctly through its walls; the parts which appeared the moſt ſolid, are hollowed out by ulceration, and full of foul and putrid ſanies; while the bone has been declining into diſeaſe, the cancelli and marrow have been degenerating into a ſort of fatty maſs, with which much of the cavity of the tumor is filled, and thence ſuch diſeaſe has been very generally deſcribed under the name *oſteoſteatoma*. This fatty ſecretion, occupying the diſeaſed cavity is the part, which, when the tumor burſts into open ulcer, throws out ſuch prolific fungus, growing apparently from the ſubſtance of the bone, and ſprouting up when amputated, in the courſe of a few hours. The ſolid bone, whether radius or thigh-bone, is annihilated, and a mere ſhell of oſſeous matter ſubſtituted in its place, and that in a manner ſo peculiar, that it muſt ſeem to the unintelligent obſerver, as if the ſmall and ſolid bone had been expanded into an extenſive and flat plate of oſſeous ſubſtance, whereas the proceſs is in truth very ſimple and very intelligible. The bone dies piecemeal of ulceration, or what, in technical language is termed caries, and is conveyed away by abſorption; but the bone being dead, the ſurrounding membranes, viz. the perioſteum and tendinous expanſions, which once formed a part of its ſyſtem of circulation, continue ſtill alive, and ready to ſecrete new bone; and thus it happens that while carious abſceſs preſerves a large cavity full of foul matter, the ſurrounding membranes continue ſecreting bone, which, like a ſhell, thin and expanded, covers this cavity, and forms the walls of the tumor, of which ſome part is compoſed of thin expanded bone, reſembling a cranium, ſome of cartilage, ſome of thickened membrane; and this ſhell is formed in proportion as the original fabric of the bone is deſtroyed.

Bone is deſtroyed by this internal ulceration, juſt as it is by open caries, piecemeal; the proceſs would not be ulceration, if, while one part were periſhing the other were not active and ſecreting new matter; ſo vigorous ſtill is the general life of the bone, while the internal parts are thus ſuffering, that while one ſide is waſting with ulcer, the other ſide is often ſecreting bone irregularly and profuſely, and ſhooting out into fantaſtic forms among the membranes and ſurrounding parts, whence the center of the tumor is cavernous and cellular, and the walls often rough with ſpinous and projecting points. So merely local is the action of arteries in a tumor, whether oſſeous or ſoft, that one ſide, or part, or bump of a tumor grows viſibly, and protrudes; the features and external form of the tumor, gradually changing, without any ſenſible cauſe; and ſo peculiar is the ſecretion of each ſpecies of vaſcular ſtructure, according to the original deſtination of the part, that

in one part of a tumor is generated bone, in another griſtle, in another gelatinous effuſion; while in another part, the vaſcular action is violent and deſtructive, and the ſolid bone, marrow and ſurrounding membranes are all reſolved into a foul and fœtid ſuppuration. From the perioſteum is ſecreted bone; from the marrow, this ſteatomatous and ſolid fat, with which much of the tumor is filled; to the tendinous and aponeurotic parts we can diſtinctly trace the cartilaginous ſecretion; and the gelatinous effuſions we can perceive, even during life, have their walls thicker or thinner according to the degree of inflammation.

Theſe are the external characters, and internal conditions of a tumor, occupying any of the bones. Such tumor ariſes often from a bruiſe or fracture; ſometimes from a leſs obvious cauſe, or from internal diſeaſe. The radius, for example, is fractured at the wriſt, reunites, and heals, but heals clumſily; the thickening never ſubſides, the pain never ceaſes, and though not great, is greater than what is natural to a fracture; at length a ſenſible tumor ariſes;—at firſt it is firm, but in proportion as it increaſes in ſize, it becomes ſomewhat ſoft and elaſtic: the thin plate of bone of which it is compoſed yielding to the diſtenſion from within.—From time to time the tumor changes its form, ſtill increaſing in bulk; on the ſide of the radius it is firm and ſolid; it bends and yields at the parts moſt diſtant from it; it is plainly bony at its baſis, and as obviouſly cartilaginous in the extreme part of its circle; it plainly contains matter in thoſe ſofter parts, where it yields to the impreſſion of the finger: cartilaginous knobs ariſe, and ſometimes are reddened on the ſurface; and at certain points the fluctuation is of ſuch a kind as to imply, that the effuſion is in part of a gelatinous nature. Thus the tumor grows and extends, with various irregularities in form and conſiſtence; it overhangs the dwindled hand, the uſe of the joint is loſt, and the patient, who would gladly be delivered of it at an earlier ſtage, has in the end no choice left; for when once it burſts into carious ulceration it never heals, the fœtor is inconceivably overcoming, attended with hectic. You are alſo to remark, that when ſuch diſeaſe takes place in the hand itſelf, the joints of each of the fingers grow out into tumors, at firſt of a heart-like form, correſponding with the articulations of the finger-bones; but in proceſs of time, they grow to globular, irregular, and almoſt tranſparent tumors, ſtill firm, or at leaſt of a cartilaginous firmneſs. The whole hand degenerates into a deformed maſs, diſcoloured, ulcerated, and fœtid; from the individual knobs of which deformed maſs, the points of the reſpective fingers project like griffin's claws, with crooked nails of enormous length.

You will conceive, I truſt, from theſe general deſcriptions, an idea, not far from perfect, of the irregular forms, and internal diſorder accompanying this diſeaſe: you may imagine how ill the ſurgeon is qualified for practice, who is not aware of theſe changes in the internal ſtructure; he feels fluctuation, and, regardleſs of the hiſtory of the tumor, of its firmneſs, or of its connection with a bone, plunges his abſceſs lancet into it, and it pours out, if he ſtrike deep enough, a profuſion of thick matter; he then believes that it will heal, but it will never heal. Or, knowing it to belong to the bone, he imagines, perhaps, that it is a firm and ſolid tumor, but believes that the tumor is moveable, becauſe the radius moves along with it, allowing it to turn; he projects an operation for cutting off this tumor of the bone, but, after a ſlow and painful diſſection, he finds it not ſolid but cavernous, and full of fatty or fœtid matter; he finds the bone to which he imagined the tumor attached, entirely gone, and the joint to which that bone belonged entirely open; he finds the ſmooth cartilaginous heads of the wriſt-bones expoſed in the cavity of the ulcer; and is forced, after the patient has loſt much blood, and manfully endured a ſlow excruciating operation, to cut off the hand. Such are the leſſons which experience teaches, and I have known inſtances where the caſe and all its probabilities had been maturely conſidered, by men of great ſkill and judgment; where a LYNN, ſurrounded by his approved and ſkilful friends, has reckoned the probability of ſucceſs, ſuch as to vindicate an operation; the tumor ſmall, firmly attached to the radius, turning eaſily along with it, not yet diſtorting the tendons, not yet interrupting the uſe of the hand, I have known the operation, performed even by ſuch an operator, fail. Now, in ſuch caſes, the tumor does not ceaſe to grow, the inciſions heal up, the part of the radius cut out by ſaws grows again, the tumor continues to increaſe, till it deſtroys the wriſt, the hand dwindles, the fingers grow long, ſhapeleſs, and powerleſs, from want of uſe, and amputation is, in the end, the only reſource.

The forms of this diſguſting diſeaſe, which never fails to deſtroy the limb, are infinitely various. I have ſeen the ancle of a woman, from a very ſlight accident, fall into this diſeaſe; the tibia and fibula grow into a common tumor; the bones ſeemed to me annihilated, and a large ſhell of bone ſubſtituted in their place. The leg, in the courſe of the diſeaſe, twiſted round in a ſingular manner, and the limb enlarged to the ſize of the pillow of a ſettee. This woman died of hectic, from the open caries of the tumor. The wriſt, more expoſed than any other part to ſprains and fractures, is, moſt of all, liable to be thus deformed and ruined; the

hand itſelf is ſtill more liable, the original injury is ſome ſlight blow or ſprain;—one finger is firſt deformed, joint after joint enlarges, one finger becomes crooked after another, the nails project unpared tike talons, and force their way into the very fleſh of the ſwelled and ulcerated hand, which they ſometimes actually penetrate through and through; the hand degenerates into an unwieldy and irregular maſs, ſtudded with knobs and bony tumors. From a neglected fracture of the collar-bone, I ſaw once in a ſtout young man, who, living a moſt diſſolute life, left the fractured part no reſt to heal and unite, a tumor formed partly bony, partly cartilaginous, riſing to the height of ſix inches, round, inſulated, moving when the arm was moved, too large and too critically ſeated over the axillary artery, to admit of extirpation, and which, I doubt not, has by this time become carious, and occaſioned his death.

The ſtage and period of growth at which ſuch a tumor may be extirpated, if ever ſuch operation be practicable, I profeſs not to know; the circumſtances muſt be very favourable indeed, to incline me to undertake ſuch an achievement; it is often indeed a matter of doubt, whether it would be adviſable even to amputate the diſeaſed limb, for occaſionally we ſee both hands thus diſeaſed, and often the tendency to form ſuch tumors ſeems to prevail through all the oſſeous ſyſtem. If the diſeaſe proceed from a fracture or bruiſe, we cannot venture to extirpate the tumor, for the joint is diſeaſed, and we have no reſource but amputation: if the tumor is ſpontaneous and without any violence or manifeſt cauſe, we have reaſon to fear it is a conſtitutional, and not a local diſeaſe, and dare not propoſe amputation with confidence; it is only in the rare occurrence of a bony tumor being altogether limited in its growth, inſulated in its form, ſolid and firm, and unaccompanied with diſeaſe of the ſurrounding parts; ſeated on the ſhaft of the bone, not connected with the joint, and yet growing to a great ſize, and threatening deſtruction, that we ſhould think of any ſuch operation. Such, perhaps, is a caſe recorded by Heiſter of a great bony tumor riſing from the middle of the ſternum, equal in ſize to a child's head, which was ſucceſsfully extirpated.

The general deſcription of this diſeaſe, and the chief practical leſſons, will be as fully illuſtrated by the following caſe, as by a hundred ſuch, for it includes all the principal features of the diſeaſe, and all the practical difficulties, and is illuſtrated by a drawing.

" A labouring man, about 40 years of age, ſallow, lean, and meagre, preſented himſelf with a tumor of an enormous ſize, and of an anomalous character, partly

ſolid, partly cartilaginous, occupying two thirds of the fore arm, from the wriſt upwards: the hand was ſound, and all its joints limber, the wriſt bended, and the fingers moved eaſily; it was from pain only, and weakneſs, and the incumbrance of ſo great a tumor, that he could no longer work: the tumor ſeemed alſo to move freely, whence it ſeemed poſſible to diſſect it away, and ſave the joint; and the ſurgeon, a man whom I reſpect as a man of learning, ſkill, and conſummate prudence, was induced to begin a partial operation, a diſſection of the tumor, from a ſincere deſire to preſerve the right hand of a poor labourer.

" But here you are to take notice, (and I ſhould put no value on a caſe which did not convey ſome practical leſſon,) how unexpectedly we are ſometimes involved in great perplexities from reflecting too ſlightly on the nature of a tumor: a tumor of this ſingular complexion, any tumor indeed which requires an operation, ſhould be ſo particularly examined, as to enable the ſurgeon to prognoſticate every thing that could occur, and to deſcribe the diſeaſe before amputation, as preciſely as if it lay already diſſected before him: much of what will be found on diſſection may, in almoſt evey caſe, be anticipated, and every ſuch anticipation will be happy for the patient and creditable for the ſurgeon. The ſurgeon ſhould, at leaſt, aſcertain the general character of the tumor, yet, I queſtion whether, in this caſe, it was abſolutely known, that the tumor was at all attached to the bone; that it was merely a tumor of the radius, aſſuredly not.

" Little is to be learnt, even after much inquiry, from thoſe of the lower orders concerning the early ſtages of their diſeaſes. This, perhaps, was of a nature originally malignant, but certainly irritated by neglect at firſt, and, in the end, by imprudent advice and raſh applications: the man had, about ſix or eight months before applying for aſſiſtance, firſt obſerved the diſeaſe, in the form of a circumſcribed ſwelling, riſing upon his wriſt, gradually increaſing, and becoming daily more painful: he imagined it right to apply poultices, and, after ſome time, brought it happily, as he imagined, to a ſuppuration: but, as it did not heal, a miſchievous old woman undertook the cure, cramming it with tents, and acrid and corroſive powders, and making ſo very free with the lancet, that he narrowly eſcaped dying of a hemorrhagy, cauſed probably by the eroſion, or wounding of one of the veins above the wriſt. The tumor was, at the time of the operation, enormouſly large, (for the baſis only of it is ſeen in theſe drawings;) it was at the lower and bigger part of a duſky brown, but at its upper and ſmaller end of a freſher colour, with a wide and open ulcer, bleeding at times, and diſpoſed to throw out a luxuriant fungus,

to ſuppreſs the growth of which was, perhaps, part of the old woman's intention, in applying the eſcharotics, if intention of any kind can be imputed to ſo ignorant a creature. The veins, as uſually in bony tumors, were far from being conſpicuous even in this part.

" This poor man, having willingly aſſented to any operation, however lingering or painful, which might ſave his hand, the diſſection was carried all round the tumor and into its central parts, before the ſurgeons preſent were undeceived. As the radius turns vertically like a ſpoke or ſpindle, it turns without any apparent motion, except in the parts connected with its lower end; the hand turns freely along with the radius, ſo that we never ſuſpect till we become acquainted with anatomy, that it is by the ſpoke-like motions of the radius that the hand moves; it ſeems moveable in itſelf by its own immediate joints. This tumor in like manner moved eaſily, could be turned upwards and downwards, ſo that the ſurgeon never once ſuſpected that the motion was in the radius, or that the tumor was fixed and made a part of that bone; it ſeemed moveable, and doubting, he began to extirpate it, by drawing a long inciſion round its root, on the ſide of the ulna: but, finding it difficult, with this limited inciſion, to diſſect the tumor, he prolonged the inciſion, continuing it over the back of the hand to the knuckles, in the direction of the extenſor tendons. He then diſſected more freely, and continued ſeparating the ſkin from the tumor, till he came to a thick and ſolid ſac, which ſeemed to conſiſt of the muſcular fibres and aponeuroſis of the ſupinator quadratus muſcle.

" He continued this diſſection, ſeparating this thick and ſolid ſac from the interoſſeous ligament, till he could go no farther; finding that it terminated then in a ſolid and oſſeous baſis, he now plunged intrepidly into the heart of the tumor. In cutting into the heart of the tumor he found that he had opened a very large ſac, not firm only, but oſſeous: but ſtill as he was penetrating into the tumor at one ſide, viz. at the ſide nearer the ulna, with which the tumor was manifeſtly unconnected, and at the greateſt poſſible diſtance from the radius, from which the tumor in fact aroſe, he continued ſtill unſuſpicious, and perſevered in diſſecting away what he imagined to be a common tendinous ſac, oſſified only at certain points: he made thus a large opening into the tumor, felt its cavity full of looſe and fatty bodies, puſhed his finger under the extenſor tendons into the deepeſt part of the ſac, began to hook out the fatty tubercles with his fingers, and, at laſt, baling it out with his hand, (for the cavity was large enough to admit his hand,) hooking with his finger and catching the fatty maſſes in his palm, he ſo far emptied the cavity as



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to be able to ſearch with his fingers in every direction, and then he found, to his utter confuſion, the ball of the carpus formed by the ſcaphoid and lunated bones, at the bottom of the cavity, bare: he was now, for the firſt time, undeceived, and knew what ſort of diſeaſe he had to contend with; he was now conſcious, that the radius was diſeaſed, the joint deſtroyed, the original bone ulcerated and deſtroyed; he felt diſtinctly that the ball of the carpal bones, orginally oppoſed to the lower end of the radius, was now, by the deſtruction of the radius, left naked; and, in fine, that the wriſt-joint was irrecoverably ruined. There was no going on with this operation, and no ſtopping here; he therefore explained to the patient, who had borne this ſevere and long protracted diſſection with great compoſure, the neceſſity of amputating his hand, which he ſubmitted to with equal reſignation."

The reflections naturally ariſing out of this caſe are obvious and impreſſive; we muſt be conſcious how ſuddenly a ſurgeon may, in a moment of thoughtleſs ſecurity, be plunged into circumſtances extremely perplexing. How becoming it is to inveſtigate and examine with care, the hiſtory of every diſeaſe before operating, and to aſcertain the ſoft or ſolid, the fixed or moveable ſtate of a tumor, its probable connections and eventual dangers: we ſhould be aware of attempting (which is indeed equivalent to promiſing,) to extirpate a tumor, which, though apparently moveable, is only ſeated on a moveable bone: we ſhould be careful not to promiſe a cure where, perhaps, the joint is deſtroyed: not to enter upon a painful and exhauſting operation, in a caſe where nothing but amputation can avail. In a caſe, ſuch as I have juſt deſcribed, it ſhould be recollected, that the metacarpal bones lie very deep in the hand, have a conſiderable latitude of motion, and may communicate that motion to the tumor; the circumſtances of this tumor and its hiſtory, were ſuch as might deceive the moſt circumſpect; the turning of the radius conveyed an idea of the tumor being moveable; the elaſtic and cartilaginous feeling, that it had nothing extraordinary in its nature; the ſac, when the ſurgeon had diſſected down to its root, was ſuch as gave him reaſon to believe it was but in part oſſified; the fat which he ſcooped out from its cavity, that it was merely a ſteatome; it was not till he felt with his finger the ball of carpal bones naked, that he knew the joint to be diſeaſed; he had every apology for his miſtake, for, in a diſorder of no more than ſix months duration, he had no reaſon to believe there could exiſt ſuch univerſal deſtruction of the joint and of the radius.

Theſe drawings repreſent the chief circumſtances of the diſeaſe: (a a a) mark the margins of the ſac, where a great portion of it had been cut away: (b b) mark

the oſſeous parts of this large ſac terminating in ſpiculated points of bone, the whole ſhell conſiſting either of bone, nearly of the thickneſs of the cranium, or of a griſtly and elaſtic ſubſtance, the bone gradually declining into cartilage: (c) marks the lower head of the ulna, ſomewhat enlarged by diſeaſe, and puſhed entirely out of its juſt place by this tumor of the radius: (d) marks the extenſor muſcles cut acroſs in their fleſhy bellies; (e) their tendons paſſing over the diſplaced head of the ulna; (f) the ſame tendons paſſing onwards to the back of the hand; (g) ſhews the bellies of the flexors lying on the lower face of this bony tumor, but not ſo far diſplaced from their natural ſituation; (h h h) marks the fatty contents of the tumor ſecreted by the parts which form the marrow, and from which the term of oſteoſteatoma, or tumor conſiſting partly of bone, partly of fat, is derived. The ulna (i) is ſound and in its juſt place, except that its lower end is ſomewhat diſplaced, and a little enlarged; the part of the radius (k) is ſound and natural; but at this point where it joins the tumor, it has been ſo entirely deſtroyed by internal caries, that the whole of the head and two thirds of the ſhaft of the bone is annihilated: (e) marks the ball of the carpal bones, now left expoſed, by the deſtruction of the head of the radius: (m m) marks the firmeſt plate of bone; and (n n) ſeveral ſpiculæ, or prominent points; (o) marks that prolonged inciſion, by which the operator enlarged his opening when he found difficulty in diſſecting round the ſac.

But a charitable endeavour to ſave the hand of a poor and labouring man, even when it involves us in a ſevere and fruitleſs operation, is not the worſt error; the ſurgeon, alarmed by the uncouth appearance of a hand deformed by ſuch diſeaſe, and not calculating with due deliberation the individual bones that are affected, might raſhly amputate the whole hand, where an uſeful part of it might be preſerved. Among the caſes of this nature that ſtand recorded, is one by Severinus, ſhort indeed, but not the leſs intereſting: "Hyeronimus Damianus, a youth about twenty-two years of age, crooked and ſcraggy, and of a puny habit of body, had his right hand ſo enlarged as to be a burden too great for him to bear: in lying, he laid it above his head, walking, he carried it with difficulty on his other hand: it was diſeaſed, chiefly by the enlargement of the phalanges of four of the fingers; the individual tumors you would have likened, in reſpect of ſize, to lemons, in reſpect of colour, to rotten apples, being large, globular, and livid: theſe knobs, or enlargements, were plaited over each other, and the points of the nails projected like claws from the extremities of the ſeveral tumors. Men of ordinary genius and reſources no ſooner

ſtumble upon a difficulty than they are alarmed, and fear magnifies every danger that is likely to affect their reputation or practice. Many ſurgeons, in a caſe like this, fearful leſt, after a partial operation, the diſeaſe ſhould return, would have ſtraightway chopped off the hand. Severinus acted quite otherwiſe: cutting off each finger by the laſt joint, by which it is united with the carpus, he burnt the roots, and brought the parts to a ſound and healthy cure: he thus preſerved the hand, i. e. the carpus and the thumb, the form, and ſomething of the uſe of the part, for ſuch a ſtump antagoniſing the other hand, and aſſiſting it, would be very precious *. Enormous as this tumor was, Severinus had the ſkill and courage to ſave at leaſt the patient's thumb: and we have the conſolation to learn, from the caſe of this unhealthy and crooked creature, plainly diſpoſed to diſeaſes of the bones, in whom the ſpine was deformed, and the tumor of the hand ſpontaneous, that it is poſſible, even where our inciſions can hardly carry us beyond the immediate limits of the diſeaſe, to accompliſh a cure.

In the ſketch of this hand, you will remark, that the bones are alone diſeaſed, that the ſeveral knobs or tubercles repreſent the ſeveral phalanges or joints of the fingers; that the hand and wriſt (a) are dwindled, while the tumors (c. d. e.) repreſent the ſeveral joints of the ring finger, which had far exceeded the reſt in ſize, forming the chief bulk of the tumor: the elongation of the whole hand, demonſtrates the growth of the bones in every direction.

But extenſion ſuch as this, eſpecially when proceeding from the high action of veſſels, muſt end in ulceration, which is the natural concluſion of the diſeaſe. The ulcer is fœtid and carious, affecting at once the bone and the fleſh, and ſo ruinous to the health that amputation cannot be delayed. Such, for example, is the caſe communicated to Severinus by LARCHÆUS, accompanied with a drawing: It ſeems to have been a tumor of enormous ſize indeed, involving all the carpal and finger bones, very maſſive and tuberculous, the hand weighing no leſs than ſeven pounds; the bones were thoroughly diſeaſed. This irregular maſs breaking out in its center,

* Hyeronymus Davianus, Rochæ Mondraconis adoleſcens, vigeſimum ſecundum annum natus, gibber, ſtrigoſus, et puſillo virium robore, dextram manum, ſecundum quatuor phalangis digitos, gravem ita, ut ſuſtinere non poſſet cubans quidem capiti innixam, ſtans vero, ſubjecta altera manu ſuffultam geſtabat. Comparaſſes dura tubera, partim magnitudine limaniis corticoſis, partim etiam colore non adhuc maturis malis inſanis, ſic alte turgebant, ſic particulis quibuſdam liveſcebant. Una alteris implicita ſecundum digitorum nodos excreverant adeo circa extrema ungues, ut hi ſummis apicibus vix apparerent.

(in the middle of the carpus) into ulceration, deſtroying not only the fleſhy parts but the bones, there enſued a hectic fever, when the man betook himſelf to the hoſpital of St. James's for incurables, and ſolicited to have his hand amputated, which otherwiſe he would not have parted with, for he was a pauper, and lived by expoſing this monſtrous maſs of diſeaſe.

So deſperate do I account this kind of tumor, when accompanied with any general diſeaſe of the bones, and ſo loathſome are the carious ulcers which ſooner or later enſue, that I always think it a conſolation when the diſeaſe is in any degree local, even though it admit not of ſaving the hand by any partial operation; if it allow of our ſaving the patient's life by amputation, I think it a ſpecial piece of good fortune. How little it was in our power to ſave the patient whoſe wriſt is drawn on the ſame ſheet with this of Severinus, you will perceive from the following notes of his caſe: "His wriſt is deformed and loaded with a tumor, or rather a congeries of tumors, ſurrounding the joint, knobby, hard, immoveable, of a rocky firmneſs, and plainly proceeding from the bones, both radius and ulna: The arm is weakened by the tumor, the wriſt almoſt powerleſs, the hand dwindled from want of uſe. The man is about twenty-ſix years of age, a weaver by trade, born with this diſeaſe, and now in a condition which hardly admits of any alleviation. This tumor of the wriſt was obſerved even at his birth; it was then very ſmall, and waxed ſlowly and gradually to its preſent ſize: From year to year the tendency to diſeaſe became more and more conſpicuous, tumors ſucceſſively formed on various parts of his body. The bones of his fingers, ribs, legs, are deformed with tumors of the ſame rocky firmneſs; one of theſe ariſing from one of the ribs, is of a moſt ſingular form, projecting from the flat rib like the handle of ſome inſtrument, and ſticking directly out. Theſe various bony tumors, which have appeared in regular ſucceſſion, and grown ſlowly, have been hitherto void of pain, and have never yet prevented his daily labour; but during the inclement weather of laſt winter, and taking mercury for a ſlight venereal affection, the tumors on the left leg, whether from the imprudent adminiſtration of the remedy, or ſome lurking taint of the diſeaſe, became ſo extremely painful, that he was diſabled from work, confined to bed, and is now in the infirmary. The papillæ, or prominent parts repreſented in the drawing, are the apices of thoſe rocky and firm tumors, which are ſomewhat pointed; and each prominent point is diſcoloured, ſo as to aſſume the form of a common pimple, but very fiery and red. The painful tumors of the left leg, are in like manner reddened; the whole ſkin inveſting them, is inflamed; the complexion in



DRAWINGS FROM SEVERINUS.

Drawn by J. Bell.

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Engr.d by E. Mitchell.

ſhort of theſe tumors is ſuch, as demonſtrates the approach of that ulceration, which is to convert each tumor into a loathſome, fœtid and carious ſore.

Though I have upon my recollection many proofs of tumors of this nature, being altogether void of pain; yet, I have a prepoſſeſſion, that wherever there are acute pains in the bones, there is actually a tendency to ſuch tumors; the cloſe connection of pains and tumors in venereal caſes, vindicates my ſuſpicion, and I believe, that when a patient ſpeaks of rheumatiſm in his bones, and feels it deep ſeated with oppreſſive pain affecting the whole limb, the diſeaſe is actually ſeated in the center of the limb, and ſubſtance of the bone: Of one very ſingular caſe of this nature, I find I have taken ſhort but accurate notes: "John M'Donald went early in life an apprentice to the Weſt Indies; he was then a ſtout young man, and in his profeſſion as ſtone-maſon had a gang of workmen under his charge; and during a period of ten years which he ſpent in that climate, had ſuffered no leſs than ten ſucceſſive and ſevere attacks of fever and ague, and had ſuffered much from dyſentery. He is married, and has been ſo many years; he is a ſober and reſpectable man, apparently fifty years of age; never had venereal complaints, never had general rheumatiſm, nor indeed any other pains in his bones, but that which I am now about to deſcribe."

"He had ſuffered very violent pains about his ſhoulders and arms, but eſpecially in the left ſhoulder-bone for the ſpace of a year; thoſe pains had in ſome degree ceaſed, and the pain in the left arm had been little diſtreſſing for three months, when one day, at a quarterly meeting for the regulation of a common ſubſcription fund, or ſociety ſubſcription for the relief of diſtreſſed members, a little girl of five years old, being in the room, he lifted her over one of the benches, and in the moment of doing ſo, felt a pain ſo ſudden and acute, that he could not be perſuaded but that ſome one had hit him, a ſmart blow from behind, acroſs the arm; he ſpoke, he ſays, very teſtily, and could not help crying out, that by that ſilly trick they had raiſed his old pain, which inſtantly became more violent than ever. From that moment he was incapable of raiſing his arm to his head; his pain, upon every occaſion, of coughing, laughing, or moving haſtily, is exceſſive: but when at perfect reſt, he has no pain. From this period a ſwelling begun to ariſe, occupying gradually the upper and middle parts of the ſhoulder-bone, ſurrounding it like the lump of clay and ſtraw which is wrapped round a grafted tree. In this very ſingular caſe, I have little doubt, that the fibres at the origin of the triceps, and inſertion of the deltoid muſcles had given way, in conſequence of the diſeaſed ſtate

of the perioſteum, and tendons, where they are implanted into the humerus, and that from ſuch injury the tumor had ariſen;—the bone, I doubt not, is carious within, ſupported only by this ſhell or new ſecretion; I could bend the arm gently, and could perceive that the ſac of bony ſecretion, which at firſt ſeemed perfect and firm bone, is in part cartilaginous, and yields; the arm bends at this thickened part with a ſort of elaſticity: Having one day committed his arm for examination to a very brutal ſurgeon, and turned to go away while he was thus employed, he called me back, with great exultation, to ſhew me, that he had been able to bend my patient's arm to an obtuſe angle, ſo as to put the fact of the ſeparation of the bones, and the flexile and elaſtic nature of the tumor beyond diſpute; a favour, which I acknowledged, I fear, in a very ungracious manner.

I have given, along with the drawing of the wriſt of the man whoſe whole oſſeous ſyſtem was diſeaſed, one from Mr. Mery, of the hand of a youth of ſixteen, which had attained to a prodigious ſize and monſtrous form; it weighed, after amputation, from ſix to ſeven pounds; it was one deformed maſs conſiſting of three protuberances of various magnitude; the largeſt, (a figure 1.) belonging to the ring finger, appeared chiefly on the back of the hand, and was ſeven inches in diameter; the tumor next in ſize (b), proceeding from the mid-finger, was ſix inches in diameter; that proceeding from the little finger, was four inches in diameter, and is ſeen only in the ſecond drawing, viz. in the ſkeleton of the hand at (c). The ſkin, wherever it lay over theſe tumors, was coarſe, with deeper ridges:—the ſurface was deformed with deep ulcers, affecting not the ſoft parts only, but the bones: Though from the unſightly appearance of the whole maſs, it was by many pronounced cancerous, yet theſe ſores were in truth red, granulating, and healthy; even the deepeſt of them were void of pain, and the veins of the hand, uſually ſwelled in cancerous tumors, were flat. Through the ſkin, which was thin from extenſion, the tumors felt very firm and oſſeous; the lad aſſigned, as the cauſe of this monſtrous deformity, the hand being bruiſed at the early age of ſix years: He was entirely well of this hurt before the hand began to grow, but it began ſoon after the ulceration healed to increaſe in ſize, and continued to enlarge for ten years. The hand, he had remarked, during the two latter years, had grown more than in all the eight preceding. Upon diſſecting the amputated hand, the tumor was found to lie excluſively in the bones; The greateſt tubercles were merely enlargements, of the firſt and ſecond phalanges, of the three laſt fingers; thoſe joints of the fore-finger and thumb being ſound. The joints, in this inſtance, at the ſame time that

Fig: 1



Fig: 2



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Drawn by J.Bell.

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they were enlarged, were motionleſs from being anchyloſed; but their articulations with the metacarpal bones were fixed, only the rigid ſtate in which the tendons were, from motion being ſo many years ſuſpended. The ſhell of theſe tumors was thin, the internal parts croſſed by bony fibres, cellular, and cavernous, were filled with a juice reſembling the jelly of meat in colour and conſiſtence; and it is ſingular, that the carpal and metacarpal bones being but ſlightly affected, and the extreme phalanges on which the nails are implanted, entirely ſound, the intermediate bones were enlarged to this prodigious degree. One only of the metacarpal bones, that, viz. which ſupports the mid-finger, was diſeaſed, and ſo far enlarged as to be an inch and a half in diameter, ſtudded with ſome ſmall tubercles, and expoſed in part by carious ulcers. The carpal bones were perfectly SOUND.

There is no caſe from which ſome leſſon, more or leſs important, may not be deduced: all this deſcription is intereſting. The two drawings repreſent, 1ſt. The deformed and fœtid maſs, the enormous tumors, the roughened ſkin, and the ulcers penetrating into the cavities of theſe tumors. 2d. The ſkeleton of the hand, with exhibiting the reſpective tumors of the middle ring, and little fingers, and the heart-ſhaped enlargement (c) of the metacarpal of the middle finger, is alſo ſingularly intereſting, demonſtrating that the whole tumor is bone, permanent, and firm, and not an expanſion of the phalanges, but a new ſecretion. The bone of the fore-finger was not ſo much diſeaſed as deformed, dwindling in ſize, and bending into an arch, under the preſſure of this tumor: the thin ſhells of bone, the cancellated texture of the tumors, and the carious openings, are alſo well repreſented.

From this deſcription we learn, that it is not during the period of high and violent action that tumor is generated. Matter is added to matter in the animal body by a ſlow proceſs; whereas high action terminates in ſuppuration, gangrene, or ſome violent criſis. The ſtate of vaſcular action, which is ſlower, more nearly approaching to that of health, reſembling the ſlow acceſſion of diſeaſe, or the remains of high action not yet ſubſided, is more favourable to the generation of tumor; for ſuch moderated action does not injure the ſtructure of the part, does not interrupt nutrition, allows the ſecretion of new parts to proceed, and in ſo far as it is accelerated beyond the natural ſtate, augments it. You will take notice that it was not while this hand was inflamed and ſuppurating, (for it ſeems to have been not merely bruiſed but wounded, il avoit eté gueri parfaitement de *ſa bleſſure* mais peu de temps apres ſa gueriſon,) but after the cure was ſo far complete, and the increaſed action not yet ſubſided, that his hand began to ſwell.

This caſe brings an important practical queſtion to a very ſhort iſſue, for theſe drawings prove the local nature of the diſeaſe, viz. that it is merely in the bones, always in the heads or ſofter parts, that the diſeaſe is ſeated; that the phalanges of the fingers, which are peculiarly ſpongy, and the lower heads of the radius and ulna are moſt liable to diſeaſe. Mery confeſſes (without being conſcious how far he was in that caſe to blame) that one half the hand was apparently ſound; and that, upon diſſection, the finger and thumb were found in their ſound and natural ſtate *. How then can we acquit him of raſhneſs in ſmiting off the hand of a boy of eighteen years of age, with youth and health on his ſide, and all the world before him, when, by a leſs painful operation, he might have ſaved his thumb, fore-finger, and wriſt? Surely we may pronounce him wrong, if there be one word of truth in this caſe of Severinus, when the thumb and fore-finger were ſaved.

Of the various queſtions which caſes of this nature ſuggeſt, there is one which I am almoſt afraid to inveſtigate. When in an adult ſuch tumors appear, we have reaſon to hope that they may be local, and that, by cutting out the bone, we may extirpate the diſeaſe. Even when ſuch tumors grow at once on various parts, we may, by circumſtances, be induced to extirpate the individual tumors, and cauterize their roots; but what ſhall we do when, in childhood, the diſeaſe manifeſts itſelf in various parts of the oſſeous ſyſtem? when all parts of the bones ſeem (like the cellular fat of ſome diſeaſed people) diſpoſed to excreſcences? When tumor after tumor appears in quick ſucceſſion? and the fingers, the hands, the wriſt, the elbows, the toes, the tibia, become affected? when both hands are crooked like, griffins claws, in every finger; and when the arms and feet begin to be deformed? Shall we remain ſpectators of the ruin, joint after joint, of a fine healthy boy? ſhall we calmly look on till each tumor has acquired its utmoſt magnitude, ſuppurated, and burſt into that ſtate of loathſome caries which muſt cloſe the ſcene? or anticipate this inevitable termination, amputate and cauterize thoſe tumors, and eventually ſubject our art to diſcredit, and ourſelves to the perſonal reproach of trying raſh, ſevere, and yet lingering operations? Although, in a ſituation ſo hopeleſs as that which I have deſcribed, we muſt be ſorely tempted, I yet fear there are occaſions in which duty and charity will incline us to refrain. It will not, Gentlemen, be uninſtructive to you, If I at once repreſent the ſhape in which ſuch perplexing

* Cependant la moitié ou environ, en paroiſſoit ſaine exterieurement, et le Pouce et l'Index dans leur etat naturel.

queſtions will preſent to you in the courſe of practice, and ſomething of the manmer in which, according to my conception, they may be diſcuſſed, and the prognoſtic ſo framed, as to be not inconſiſtent with truth and good faith, yet ſuch as to reconcile a patient, by ſlow degrees, to a misfortune which cannot long be concealed.

The father of a very fine boy, whoſe ſubſequent fate I need not mention, addreſſed me many years ago in the following terms:

" Sir, B—— Weſtmorland, 1795.

" It has been the misfortune of this circle of the country, to have no profeſſional gentleman reſiding in it, for thirty years paſt; and in caſes of imminent danger, where there is a neceſſity of calling one from a diſtance, the ſuffering perſon is either dead or recovered, before he can have aſſiſtance. The anxiety and diſtreſs of mind occaſioned in families is great; and alas, there appears no proſpect of our being relieved from it. The difficulty of procuring a medical friend, to narrate the caſe I am now to ſubmit to you, makes me undertake a taſk, to which, from want of profeſſional knowledge, I feel myſelf inadequate; but I hope, and believe, one of your abilities and practice, will comprehend my meaning, however ſimply or awkwardly expreſſed. A boy of mine, now ſix years old, was obſerved, at the age of two years, to get ſmall lumps at the joinings of the the fingers; I applied early to the neareſt profeſſional man, and had his caſe repreſented to gentlemen of eminence in Carliſle, and elſewhere; ſome recommended one thing, ſome another, but, in general, they agreed in thinking, that a regular and continued courſe of ſea-bathing, would in time correct, if not repreſs entirely, the growing tendency of theſe excreſcences. Flattered with theſe fond hopes, I took no care in ſeeking the advice of any more eminent men, for directions how to treat my dear boy, or bringing him perſonally to them, if a ſight of him was deemed neceſſary: but finding theſe lumps growing faſter and larger every day he lives, I am conſtrained to lay his ſituation before you.

" There is in the hollow betwixt the fore and mid fingers, a round lump, of the ſize of an egg, not of a fleſhy, but of a hard bony ſubſtance, rather more gloſſy in its colour than the other tumors on the ſame hand, but not ſore to the touch. This bump, together with the leſſer ones by the ſides of the fingers of this hand has reduced his little wriſt to a diminutive ſize; and I now find, that from the wriſt to the elbow, there is a like hard ſubſtance growing along the bone on the

outſide. The fingers of the left hand are all affected; but the growth runs along the fingers on each ſide, more eſpecially betwixt the middle joints, and what we call the knuckles, and there they have waxed ſo broad, as to make the points of the fingers ſpread as far aſunder, as he could ſeparate them if they were ſound. All the joints are free, and it is aſtoniſhing to ſee how nimbly he uſes them, in every little exerciſe he goes about: He never complains of uneaſineſs or pain, ariſing from theſe overgrowths, but is now ſo ſenſible of the ſingularity of their appearance, that he would fain conceal them from ſtrangers.

" How to account for theſe excreſcences we know not, or to what cauſe to aſſign them; that I leave to you. Some have imagined them to be of a rickety nature: Rickets, it is true, muſt, in every family now ſubject to them, have begun in one individual, and from cauſes to which every other family may be ſubject: but no child connected with him by father, or mother's ſide, has for many generations, that we can reckon back, ever had the ſmalleſt diſpoſition to this diſeaſe: would you, Sir, not ſuppoſe, that his ſpine, or breaſt, or other parts of the body, (had his complaint been of a rickety nature) would have been early affected? His body and limbs are altogether free from diſeaſe, a ſmall bump excepted, which appears on the ſole of his left foot. Others imagine his diſeaſe to proceed from foul milk: He had two nurſes, the moſt likely young women we could find; the firſt had a flux, (menſtrual) for which we diſmiſſed her in the ſixth week, but ſhe who ſucceeded was a freſh and healthy young woman, ſuckling her firſt child: ſhe had changes too, which ſhe concealed from us, and gave ſome weeks of *foul milk*; (this, it would appear, is a term appropriated to that milk which a woman gives while menſtruing); but her child, and that of the other woman, are ſtout, healthy, and free from blemiſh. My boy is ſo too, in every other reſpect, and till two years of age, never was there ſeen a child more perfectly the picture of health. Others aſcribe his complaints to cold, while he was an infant, for his ſecond nurſe delighted in carrying him abroad in all weathers. Others again aſcribe it to overſtraining his tender ſinews, his nurſe having, from vanity, encouraged the little creature in crawling through all the rooms on feet and hands, when no more than ſix months old. Whether any or all of theſe cauſes have conſpired to produce the diſeaſe, you will beſt judge; my children are very numerous, and now grown up to be men and women, are all of the moſt healthy complexions and conſtitutions.

" I have been very particular in relating every appearance, and every ſuppoſed cauſe; in any thing which you may find defective, I beg you will queſtion

me, and I ſhall endeavour to ſatisfy you; and if all will not do, ſhall be ready to bring him to you, however inconvenient it may be from ſo great a diſtance. I wait anxiouſly to hear from you, and to receive whatever medicines and inſtructions you are pleaſed to ſend us."

First Letter of Conſultation.

" We have read over this narrative with great intereſt, and and find in it nothing wanting on the ſcore of profeſſional knowledge, the complaint being of a plain and obvious nature, which a parent is beſt able to obſerve and deſcribe.

Theſe nodes, or bony tumors, (are in all caſes, as your boy's ſituation unhappily proves), a conſtitutional diſeaſe; far from being rare, many examples have come under our obſervation, in which, to prevent the progreſs of the deformity, the part where the complaint has appeared has been amputated. This reſource we are not allowed to think of in the preſent inſtance; we mention it rather to ſhew how much we dread the diſeaſe, and how difficult it is to provide a remedy.

" We have *no* precedent for any ſuch tumors diſappearing, and can hardly wiſh that they ſhould come to ſuppuration, ſince the ſubſtituting of a running ſore, loathſome, and perhaps incurable, would be all the change we could expect.

" This is a diſeaſe to which it is difficult to give a name, impoſſible to promiſe a cure; but were we to mention any remedy which we imagined might arreſt the diſeaſe, prevent the further growth of theſe tumors, or anticipate the formation of new excreſcences, it would be mercury, adminiſtered gradually and ſlowly. Unwilling as we are to give you hopes, which may never be fulfilled, we cannot allow ourſelves to be ſilent on the many favourable circumſtances of the caſe, and are not without ſome expectation, that in a boy ſo young, born ſo healthy, of a family where ſo many ſons and daughters have grown up in years, without the ſlighteſt ſign, in this or former generations, of any hereditary taint, the diſeaſe may ſtop from natural cauſes, as the boy grows in years; or may be arreſted, by thoſe very ſenſible alterations which this powerful remedy enables us to produce ſo ſuddenly, and to ſupport with little danger.

" This being at once the moſt powerful remedy, and almoſt the only one, we have to ſuggeſt, we ſhould conſider it as our next duty, eſpecially in preſcribing for a child ſo young and ſo far from help, having indeed none nearer than ourſelves, and no readier way of receiving occaſional advice than by poſt, to preſcribe the preciſe quantity of the medicine, and the regimen requiſite during its uſe. But

this is a diſeaſe of ſuch ſlow progreſs, that the loſs of a month cannot be imputed to us as a fault, and we refrain from more particular orders at preſent, till we receive an anſwer to the following queſtion.

" Since your boy cannot recover but by a long courſe of medicines, and the moſt eſſential changes in his general habit of body:—Since it is likely that your parental tenderneſs may inſpire the wiſh, in ſome future period of the diſeaſe, to bring him to town, when it might be ſtill leſs in our power to be of uſe; would it not be adviſable to look out for ſome opportunity, this ſeaſon, of having him conveyed to Edinburgh? If this be practicable, it will gratify us much; for though ſatisfied with the accuracy of the ſhort narrative you have ſent us, though conſcious that it conveys to us every information that may be expected, either from a parent, a continual and anxious obſerver of the diſeaſe, or from a phyſician; yet, in the caſe of tumors, thus univerſally occupying the joints, and beginning to affect alſo the bones of the lower extremities, there may be peculiarities in the character of the tumor, or in the conſtitution and appearance of the child, which may encourage us to better hopes, or enable us to preſcribe with greater confidence.

" In merely pointing out this, we ſurely do not overſtep the ſtrict line of our duty, that of preſcribing how this boy is to be conducted through his mercurial courſe; that we ſhall be happy to fulfil upon receiving any intimation from"— *.

When this boy was brought to us, we had the mortification to find a very fine luſty and thriving creature, with a full habit, ſtrong limbs, and a very intelligent, intereſting, and cheerful countenance, ruined by a diſeaſe apparently local. The hands were greatly deformed, growing into mere knots and tubercles, with diſtorted and dwindled fingers projecting from them like claws; the wriſts were dwindled, the radius and ulna of both arms, deformed, knotty and ſmall; one large tumor projected from the knuckle at the root of the fore-finger of his right-hand, beginning to be diſcoloured, and threatening ulceration at no diſtant period; one foot was already diſeaſed, having a tumor projecting from its ſide, from the metatarſal bone of the little toe. Every part of the bony ſyſtem was to be ſuſpected, and in ſome places I think bumps and tubercles were already perceptible. There ſeemed in truth but little hope of any remedy, or any accidental change in the ſyſtem

* (Signed) ALEX. MONRO,
J. BELL.



Drawn by J. Bell.

Engraved by E. Mitchell.

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arreſting the courſe of this terrible malady, till every joint was ſucceſſively ruined and deformed. There was little elſe to be obſerved, which may not be learned from the drawing. The diſeaſe was plainly and excluſively in the bones, which were alone enlarged, and chiefly in their ſpongy and vaſcular extremities. The reſpective tumors correſpond in number with the reſpective joints, each joint of each finger being affected; in ſhape, the ſeveral tumors correſponded with the ſhape of the phalanges or finger-bones, for every tumor was of a heart-like form, ſmall at its apex, and bulging into two round heads, correſponding with the two proceſſes, or little round heads of the joint, each finger turned away from another, as the correſponding tumor impelled it, ſo that they were not only crooked but plaited over one another. The ſmaller tumors were firm and bony; the larger ſoft, and more elaſtic; each tumor, whether firm or ſoft, was tranſparent; the larger apple-like tumor on the back of the right hand was eſpecially ſo, being as tranſparent as the freſheſt egg. The hands reſembled the groteſque claws of a griffin cut in ſtone, the knobs or tumors reſembling the round claws, and the dwindled fingers the projecting talons *. There was no ſenſibility in thoſe tumors when preſſed; no pain, night nor day; there was indeed no deſtructive vaſcular action, nor change of ſtructure in this diſeaſe, nothing but irregular nutrition, in which certain parts of the bony ſyſtem increaſed, ſeemingly at the expence of the adjoining parts; the augmentation of nouriſhment being produced by an increaſed vaſcular action very little different in degree, and not at all in kind from the natural one. In this poor boy I knew not how to reſolve. To extirpate theſe tumors with the knife, and cauterize their roots, would have been a moſt extravagant undertaking; while one tumor was reduced by a cruel proceſs, many would have grown; it would have been an endleſs work. He was yet a child with all the growth of his bones before him; during the fifteen ſucceeding years in which his bones were to continue vaſcular and growing, what likelihood was there that this diſorder ſhould ceaſe? If we were at a loſs what to preſcribe as eſſentially uſeful to the boy, we were infinitely more perplexed how to write ſo as to diſcloſe any part of the truth, or reconcile a parent to a ſituation ſo afflicting.

Not truſting to converſation, we wrote again in the following terms. "The conſolation, dear ſir, you muſt feel, in having brought your boy far from home

* Vel monſtroſis belluarum ſecundum digitos nodis, quos ſepulchralibus urnis ſculptores appingere conſueverunt. SEVERINUS.

for our inſpection, is neither ſlight nor tranſient; his ſituation is very impreſſive, and you are ſure, that we cannot reflect on it without every humane deſire, to ſearch for whatever precedents the records of our profeſſion may contain, and to conſider the whole courſe of his diſorder with a deep intereſt. We ſhall direct our attention to every thing which may ſerve to ſuſpend the diſeaſe; that indeed is all that we can hope for; but we hold it a point of duty not to conceal entirely our preſentiments. Once informed of theſe, you will be reconciled to the diſpenſations of Providence, and inclined to wait in patient expectation for the changes which future years may bring on. You have above all the conſolation of having done every thing in your power for your boy's ſafety. We fear you came from home with the better hope of ſome local remedies, or partial operations of the knife or cauſtic being propoſed. You are now to make the firſt trial of your conſtancy, by ſubmitting to the trial of general remedies, which promiſe nothing more than to ſuſpend the diſeaſe, or interrupt its progreſs. Should it ſtop, and the preſent tumors only remain, they might be ſucceſsfully dealt with, but nothing recorded in our profeſſion entitles us to promiſe this.

Whatever we may think ourſelves called upon to ſay, you muſt not allow yourſelf to imagine it intended as an apology for want of deciſion at preſent, or want of ſucceſs in future. To you, as a father, we think it a duty to diſcloſe the truth, eſpecially ſince the diſeaſe is not one that involves the life of your boy. There are, in the records of ſurgery, but too many caſes parallel, in many points, with this of your boy; but not one from which we can infer any concluſions of a conſolatory nature. From an author who had particularly ſtudied the ſubject of tumors, we have a drawing of a diſeaſe of this nature, but ſo far local, that in extirpating the tumor, though of enormous ſize, and very groteſque in its form, he ſaved almoſt half the hand. Another caſe was tranſmitted to the ſame author by a friend, which had grown from very early life, being occaſioned, as the boy's parents told him, by the bite of a ſow. A third is related in the Acts of the Academy of Sciences, occaſioned by a bruiſe. The hand of the boy having been cruſhed, the intumeſcence began from that period, and continued augmenting for ten years. Others are related by Vanderwiel and various authors, many accompanied with drawings of deformed hands reſembling thoſe of your little boy; yet we cannot avoid calling your attention to that which makes the unhappy diſtinction betwixt this and former caſes. In thoſe the tumor was limited, the cauſe was an external injury, the diſeaſe local, and

yet amputation was, in all thoſe inſtances, allowed to be the only reſource. We learn from thoſe authors little but the name, if that could be a matter of conſolation, by which we are to diſtinguiſh an incurable diſeaſe; they have called it the atheroma nodoſa. Our private experience is ſtill leſs conſolatory. We have very often found the diſeaſe conſtitutional, and have no reaſon to believe where, as in the preſent caſe, the tumors are numerous, where not an injured hand or knee alone is diſeaſed, but many of the bones, that any partial operations, or even that of amputation can be uſeful. Do us the juſtice to believe, that no fear of diſcredit prevents us from attempting whatever ſcience or experience might dictate; that if we ſpeak or act with any appearance of heſitation, it is from the peculiar difficulties of the caſe, or from reſpect to your feelings. Our moſt ſanguine hopes are bounded by the expectation (not very ſanguine) of limiting, by medicines or regimen, the ultimate ſize of theſe tumors; to arreſt their growth altogether; to leſſen or diſcuſs the ſolid matter already accumulated is, we fear, beyond the reach of art. Leaden compreſſes, firm bandaging, ſtimulant embrocations, and reſtringents, might perhaps be ſuggeſted, and they have, we believe, been mentioned to you; but we are averſe from the uſe of ſtimulant applications, which, as they could not deſtroy the parts, would, by exciting them, increaſe the ſecretion of bone. Had there been only one ſolitary tumor, however large, reſembling that on the knuckle of the right hand, we ſhould have thought ourſelves vindicated in cutting it out. Had there even been various tumors of this deſcription, we ſhould have ventured to amputate them, and cauterize their roots, at the riſk of having rebellious ulcers to contend with. Neither the reproach of cruelty, nor the long continued and repeated torments we muſt have inflicted before we could have accompliſhed ſuch a cure, ſhould have diſcouraged us; but the hands being beſet with tumors, each bone of each finger grown out into a deformed knot, and both hands being diſeaſed, makes every ſuch attempt hopeleſs. The metacarpal bones too, or thoſe on which the fingers are implanted, are variouſly enlarged; the wriſt is dwindled, and the joint at this part, and even that of the elbow, deformed. A perſon of your education and good ſenſe, a conſtant and anxious ſpectator of theſe growths, muſt know too well how little we dare promiſe, and take our prefcriptions as well as our opinions with thoſe reſervations which muſt ever, in theſe circumſtances, neceſſarily accompany them. We know, that after long obſerving this diſeaſe, you have required our advice, not with any ſanguine hopes of a cure, but with a becoming

reſignation to the diſpenſations of Providence, and with the intention of acquitting yourſelf of every duty to your child *.

* The letter of conſultation, as this gentleman lived at the diſtance of ſome hundred miles, was continued in the following terms. What has become of this boy I have not heard for many years.

" In proportion as we are deprived of every reſource but this of a general courſe of medicine; it muſt be diligently purſued, and mercury, the ſole medicine we can ſuggeſt, puſhed (though not ſuddenly, yet in proceſs of time,) to the utmoſt. To a child, it muſt be gently adminiſtered, and, in a rooted conſtitutional diſeaſe, to be continued long without breaking down the health, it muſt be very gradually adminiſtered. You will be careful to remark, that, in theſe pills, there is much mercury, and a little cicuta or hemlock; the one, is ſure, in a courſe of time, to affect the bowels, and the mouth, and, in ſome degree, the general health; the other, ſometimes produces giddineſs, and other ſymptoms denominated nervous. With this general conception of the medicines you are giving to your boy, we hope you will be able (with occaſional letters) to guide him ſafely through his courſe by the following general rules.

" 1. The boy is to be clothed from top to toe in flannel, and a comforter of worſted net put about his neck: but this does not imply, that he is to be deprived altogther of air or exerciſe; on the contrary, the flannel, by its effects on the ſurface, preſerving it in a perſpirable ſtate, will prevent any affection of the bowels, and enables you to let him run abroad every dry day, guarding chiefly againſt wet feet. The worſt effect of which, after all, would be the producing a temporary diſorder of the bowels.

" 2. The mercury in which chiefly we confide, might be very well adminiſtered without the cicuta; and ſhould the firſt ſet of pills produce manifeſt giddineſs, ſickneſs, or any general diſorder which does not relate to the bowels or mouth, theſe firſt pills, marked A. are to be intermitted, and you are to adminiſter the ſimple mercurial pill, B.

" 3. The mercury may be made effectual, either by being given internally, or by friction on the ſurface, or beſt by both ways. Let him have one pill every night, and another every morning; rub his thighs all round from the haunch to the knee with the mercurial ointment, laying the ſize of the largeſt Spaniſh nut upon each thigh, and working it all over the ſurface for ten minutes with the warm hand.

" 4. Whenever you perceive either the mouth or the bowels unpleaſantly affected, you muſt ſtop, intermitting all mercurial medicines for a while; if the gums are then ſwelled, painful, and ſhrinking from the teeth, if the breath is fœtid, the throat pained, or the glands about the neck ſwelled, and the jaws ſtiffened, intermit the mercury. Bathe the feet in warm water at going to bed, keep him at home for a few days, and on the 8th or 10th day, when theſe effects have ſubſided, renew the frictions and the pills, but more gradually; for, after being once tainted with the mercury, the habit, far from being more accuſtomed or more liable to reſiſt, is more apt to be affected by it: if not the mouth, but the bowels are affected, if he complains of pains at the ſtomach, and you remark that he goes more frequently to ſtool, and with great pain, intermit all mercurial preparations, eſpecially the pills; give immediately eight drops of laudanum, in a little water and ſugar, and put him to bed for an hour or two, when he will feel eaſy and happy; but never during the courſe allow him to be confined to bed, for that would inſtantly carry the mercury faſt towards the ſalivary glands. Should the tortures of his bowels continue, give him twelve drops of laudanum in a little tepid water, at going to bed; give him alſo a glaſs and a half of ſtrong Port wine negus to help his ſleep, and bathe his feet for ten minutes in very warm water. Should ſtill the ſick-

The rapid manner in which bone is ſecreted and accumulated to an aſtoniſhing bulk, is one of the moſt ſingular phænomena that occurs in the living body. The inſtance I am now going to relate will, I am ſure, appear ſurpriſing, but it is ſelected for a far better purpoſe, to ſerve as an example of the difficulty we ſometimes find, in ſaving the patient's life, even where the diſeaſe is local, and growth of bone ſenſible and rapid. I fear too it is one of a thouſand examples, of a man loſt in the prime of life, and dying a moſt loathſome and miſerable death, from the reluctance of the ſurgeon to charge himſelf with the fate of ſuch a patient, or to predict the future conſequences of a tumor while it is yet ſmall.—It is the caſe of a young man,

neſs or diſorder of the bowels continue the enſuing day, melt down the bulk of a cheſnut of the Confectio Japonica, in two tea-cupfuls of milk, add a little of the powdered cinnamon, three tea ſpoonfuls of chalk, and a little ſugar to make the medicine pleaſant, and ſtirring it well from the bottom, give a table-ſpoonful every two hours with two drops of laudanum in each table-ſpoonful, till he is relieved.

" The mercury is to be adminiſtered both by pills night and morning, and by rubbing, till it affects the mouth; and remember always, that when it affects the bowels, it is upon the point of affecting the mouth; but whenever the mouth, gums, and breath, are even perceptibly affected, you continue the mercury in ſuch moderate doſes, (perhaps one pill in place of two, perhaps rubbing one thigh only in place of both,) ſo as merely to ſupport the affection of the mouth very gently, that it may be ſupported very long, for, unleſs the health manifeſtly ſuffer, (and we may confidently predict it will not,) it may thus be ſupported with ſlight intervals (of a fortnight or more) for ſeveral months, from four to ſix months.

" 6. Remember that now in the drearieſt ſeaſon of the year, and eſpecially till you have experience of the effect of the medicines upon his health, he ſhould be more confined to the houſe, but never diſcouraged from taking all the exerciſe poſſible: and recollect, that to confine him, or to be ſtrict in any point, as diet, air, or the uſual exerciſe, would be to give the mercury too much power over him; and that the way to antagonize the mercury, and to make its operation gradual and gentle is, to let him have a full diet, a glaſs of wine with a cruſt of bread at mid-day, a glaſs of wine after dinner, cheerful exerciſe, and no depreſſing taſks of the memory: let him have bread and milk for breakfaſt and ſupper, and at dinner a little of broth or ſoups, and always a bit of meat, and, when his mouth is ſore, rice-pudding, cuſtard, flour pudding, panada with ſugar and wine, or whatever Mrs. ——'s better judgment in theſe matters may ſuggeſt, to nouriſh and ſupport him.

" We ſhould have no objection to the mercurial ointment being rubbed in on the hands, as being the ſeat of diſeaſe, we indeed wiſh this to be done at firſt, half of the doſe of ointment being beſtowed on the two hands, and the other on the two thighs, covering the hands after rubbing with coarſe mits, and waſhing them gently in the morning with ſoap and water. But this muſt not be continued, if there be the ſlighteſt appearance of its reddening the ſkin, or irritating the tumors, for, of all things, we ſhould moſt avoid whatever might tend to irritate any of theſe into running ſores.

" With ſuch explanations, as after peruſing theſe directions may ſeem to require, we hope you will feel ſufficiently confident; and hope moſt ſincerely, dear Sir, that you may be ſucceſsful in arreſting the progreſs of this diſeaſe. With every good and kind wiſh, we remain," &c.

" committed to my humanity and ſkill" by Dr. Forbes of Inverneſs; and, I hope, he added this latter qualifying expreſſion, from a conſciouſneſs, that, before the patient could be brought to me, he muſt be beyond the reach of ſurgery.

ALEXANDER MACDONALD, a Highlander from Fort Auguſtus, a tall and handſome lad, paſſing ſix feet in height, and uncommonly athletic, was put to the Perth Academy for his education in writing, book-keeping, and ſuch other parts of learning as might qualify him for a counting-houſe; it was intended to ſend him to America a clerk to the North-Weſt Company in the fur trade. In running violently at tennis, in the academy green, he fell, and hurt his ſhoulder: it was ſuch a bruiſe as often happens from a fall, without entailing the ſlighteſt ill conſequence, beyond the firſt pain and ſwelling: the ſkin was blackened by the bruiſe, and the joint was ſprained; he had exceſſive pain along the whole arm for twenty-four hours, but it vaniſhed gradually:—He imagined himſelf well; he had recovered every thing but the ſtrength of his arm; but after the violence of the pain, (which laſted no more than twenty-four hours), was gone, ſuch weakneſs remained, that though, from his great ſtrength, he could lift perpendicularly ſuch weights as others could not move, yet he could never raiſe his arm to his head.

I was at pains to queſtion his father, a reſpectable old man, concerning the part which received the injury; and he clearly and decidedly affirmed, that it was not the ſhoulder-joint, but the middle of the bone of the arm that received the ſhock, it was along the whole of the arm that he felt the pain, and could diſtinguiſh the marks of the bruiſe. The pain had, after its firſt violence, totally ceaſed, as if the part had ſuſtained no permanent injury, and he believed himſelf well; it was exactly at the end of a month, that the pain returned, and fixed in the joint, with a very diſtreſſing ſenſe of weakneſs, ſo that he could not at all raiſe his arm; if he meant to put on his hat with it, he had to raiſe it with the other hand, and when thus raiſed, if he lowered it again without ſupport, the moment it fell unſupported below the level, it deſcended like lead. Still he could lift perpendicularly a very great weight; but from this ſecond period of pain we muſt date the diſeaſe. The whole arm ſwelled, but eſpecially about the ſhoulder; his cries and ſhrieks were wild and melancholy; living in a remote part of the highlands, it is natural for the father to expreſs himſelf in the following words, which he invariably uſes when I queſtion him in regard to the degree of pain, " Sir, there was no hour of the night nor day in which you could not hear his wild cries miles off." He repreſented the particular pain by ſaying, it ſeemed as if he had been bored with hot irons; and his



Drawn by J.Bell.

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ALEXANDER MACDONALD.

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cries were ſo unceaſing, as well as ſo piercing, that "though they lived in a very long houſe, they had no ſleep from this time forward."

That ſuch had been his condition no one could doubt, who ſaw him before his death; for the ſwelling kept equal pace with theſe dreadful ſufferings; at firſt the arm ſeemed chiefly to ſwell from the ſhoulder-joint; gradually the whole arm ſwelled, and the fore-arm and hand dwindled. His body, before luſty and ſtrong, was waſted with the agony and want of reſt. Yet even at this time, when the arm was monſtrouſly ſwelled, and before it was entirely oppreſſed, or the fore-arm waſted, he could lift as heavy a weight with the left arm as with the right; and even to the laſt ſtage, that in which I ſaw him, his hand was ſtrong to graſp. In the firſt four months, the upper part of the arm had ſo increaſed in ſize, that the prominent part exceeded the ſize of his head, but now, at the end of nine months, it greatly exceeds in ſize his emaciated body.

When I went to receive this poor lad, I found him lying deep in the hold of a ſmall ſloop, in which he had been tranſported from Inverneſs, laid on a coarſe matraſs, and bolſtered up againſt the ſhelving ſide of the veſſel; and when the cloaths were lifted, I ſolemnly declare, that I hardly knew, at firſt, what it was that I ſaw, which was the tumor, and which his body, or how to connect in imagination the one with the other. He lay in an inclined and irregular poſture, extremely languid, and hardly able to articulate; his head inclining to one ſide, the tumor, when firſt expoſed by lifting the cloaths, might be miſtaken for his body; in reſpect of ſize, it was of a ſuitable bulk, and when the lean, yellow and emaciated thorax was next expoſed, the tumor ſeemed ſo much to exceed it in ſize, with a ſhining ſurface and brilliant colour, that at firſt I was more confounded than ſhocked, ſo impoſſible was it, in the firſt moments, to conſider of it as a tumor, or to ſee its relation to the arm. The fore-arm was dwindled and ſhrunk, and projected from the tumor at a ſtrange and unnatural diſtance from the ſhoulder: the veins were ſwelled, like thoſe of a horſe's belly: large fungous tumors, as big as oranges, projected in a group from the outſide of the arm, at the place where, about two months before, a large abſceſs had burſt; and ſuch was the fœtor of the matter running from under theſe fungi, and the languor of this poor emaciated creature, that I had no thought for the preſent, but how to get him conveyed alive to town. After a few days, when he was ſomewhat recovered from the fatigues of his voyage, I proceeded to write down the hiſtory, and examine the actual ſtate of this tumor. I found it throughout ſolid, perfectly ſolid, conſiſting chiefly

of bone, little cartilaginous; hardly in any part elaſtic or yielding, and diſcharging matter, not from any ſuperficial abſceſs, but apparently from the center of this enormous maſs. I had every reaſon to believe, that the bone and the joint, which certainly were neither broken nor diſlocated, had been generally injured, not merely by the ſhock, but by the bruiſe: that the parts neareſt the bone, and connected with it by the periosteum, had been bruiſed and inflamed: that the extreme pain for the firſt twenty-four hours, indicated only the violence of the immediate injury, but the ſlow vaſcular action which ſucceeded, at the diſtance of a month, proved how deeply the circulation of the bone was affected, and cauſed that oſſeous ſecretion which generated this prodigious ſhell of bone; while the ſhaft of the ſhoulder-bone, from the perioſteum of which this callus had been ſecreted, was in part deſtroyed by an ulcerating proceſs within: That the ulceration, deep ſeated, not only in the bone but in the joint, occaſioned thoſe excruciating tortures which were announced by wild and deſperate cries night and day: that the matter burſting at laſt through every obſtacle, had made its way through that ulcerated part of the ſurface, which is ſtudded with the fungous excreſcences repreſented in the drawing.

This burſting out of the matter brought relief from the pain; he now lay in a ſtate of extreme languor, moaning and ſlumbering; you found it painful even to queſtion him, he was ſo feeble; he fell, after a few broken anſwers, into a ſlumber of mere debility, and cloſed his eyes as exhauſted; and while I took the ſketch of his poſture, and of the proportions of this prodigious tumor, he ſlumbered continually. His extreme weakneſs precluded every practical experiment, and left for our diſcuſſion the ſpeculative queſtion only; "In a caſe ſo deplorable and hopeleſs, what ſhould we have done at an earlier ſtage, when the patient's ſtrength was more entire, and youth and vigour (for he was but twenty-one years of age,) on his ſide?"

Here, for the firſt time, I felt that a bony tumor might, by advancing to the trunk of the body, preclude amputation as entirely as aneuriſm of the ſubclavian artery! That the queſtion here to be reſolved was not, whether we might dare to amputate at the ſhoulder joint, the queſtion was of amputating the ſcapula alſo, and along with it a tumor, exceeding in ſize even the trunk of the body! and the accident mentioned by Cheſelden, (an accident which has often happened ſince,) of Wood the miller, whoſe arm, ſcapula and all, was rudely and ſuddenly torn from his body, could not but come into our recollection. There was hardly left us even a choice,

to exerciſe our diſcretion and ſkill upon; for, from the ſtate of the veins, large, tortuous, and already ulcerating, and ſo numerous as to give a livid colour to almoſt all the ſurface of the tumor; it was plain, that he was in daily peril of hemorrhagy, and that this was at no remote period, certainly within a few weeks, to put a period to his life! Could there then be a queſtion, whether to wait in fear of that hemorrhagy, which was aſſuredly to end in death, or to riſk by operating, that hemorrhagy by which he might be ſaved alive? For my part I had not the ſhadow of a doubt: What ſhould determine us in any deſperate caſe, to do deſperate things? Surely the poſſibility of ſafety through operation, the certainty of death! I ſaw it poſſible, by tying firſt the ſubclavian artery, the root of all the circumflex arteries of the ſhoulder and ſcapula, to prevent any alarming degree of hemorrhagy; by ſawing acroſs the outer end of the clavicle to get command of the ſcapula, and turn it back, as eaſily as the flap from an ordinary ſtump; to tie when it was cut, the arteria tranſverſalis humeri, and certainly to ſeparate the whole, without immediate death. But had this been an enterpriſe as certainly fatal as the Cæſarian ſection itſelf, ſtill it gave ſome chance for life. Confident in the juſtneſs of this reaſoning, moral and phyſical, I ſhould have urged him to this awful trial, and devoted myſelf to the taſk; but he was ſunk too low for any trial, and to be regarded only as an object of charitable care. He died in the Royal Infirmary of hemorrhagy, about three weeks after his admiſſion, and theſe are the notes of the diſſection.

DISSECTION,

July 13th, 1806.

"Having divided the integuments, which were extremely thin, we found, on attempting to cleanſe the tumor from one extremity to the other, that it was of a ſubſtance much reſembling callus; in many places it was ſo firm and ſolid, that after trying in vain to divide it with a ſtrong knife, we were obliged to betake ourſelves to the common amputation ſaw.

"The cells of this bony tumor were every where filled with a matter reſembling thick cheeſe; the tumor itſelf, from its great ſize, and the entire appearance of the os humeri, ſeemed only to be attached to that bone; but upon a more minute examination, was plainly a production from its ſubſtance. The ſhoulder-bone could be traced through the whole tumor; but enlarged, ſpongy, and ulcerated. The upper part of the ſcapula, the acromion proceſs, and the outer end of the

clavicle, could, during life, be plainly diſtinguiſhed to be enlarged, and to form part of the tumor; and upon diſſection, all the bones forming the ſhoulder joint were found to be deeply diſeaſed. The upper and moſt bulky part of the tumor, ſeemed to proceed as much from theſe, as from the os humeri, and the joint was completely anchyloſed."

There is a period in every ſuch caſe, when the tumor being ſtill of moderate ſize, and yet requiring an operation of the moſt deſperate and unprecedented nature, viz. the amputation even of the ſcapula itſelf; the queſtion muſt be of the moſt perplexing and agitating nature. The ſurgeon muſt be conſcious, that the patient is to die a loathſome and miſerable death; yet it is a conſciouſneſs which he never can bring home to the mind of the patient or his friends, and if he take upon himſelf to urge an operation ſo deſperate, and the patient die,—the ſlight impreſſions his repreſentations have made vaniſh, the danger, which was diſtant and problematical, has been accelerated by his miſconduct; by his ill ſucceſs he is condemned, and never can it be put out of the minds of the relations, that the patient might have lived, or that even the tumor might have burſt and reſolved into matter. But a precedent like this, and I have witneſſed and could relate many, ſolves all ſcruples, and he who knows the conſtitution of ſuch a tumor, its inevitable increaſe, and the loathſome end of the ſufferer, will not, I believe, ſhrink from his duty. This caſe is highly intereſting, as it is the direct conſequence of a very ordinary miſchance, of a ſlight fall, and a bruiſe importing nothing: it is not merely a prodigy to be gazed on, but an important precedent.

Allow me, before I forſake this intereſting ſubject, to give you one document in practice, from the univerſal ignorance, or wilful neglect of which, I ſee every day the moſt diſmal conſequences. A bone, both in itſelf, and in its ſurrounding vaſcular apparatus, is as ſuſceptible of inflammation, and while it is inflamed, or in danger of being inflamed, ſhould be as delicately treated as the ſoft parts. How often, how continually you have ſeen this injunction reverſed, I need hardly remind you: every bruiſed bone, and ſprained joint, is rubbed and diligently moved. With an ignorant and ſtupid fear, of the joint loſing its motion, it is wrought backwards and forwards in every direction! and whatever inflammation is begun, is never permitted to ſubſide! Thus a military gentleman, whoſe ſhoulder-bone was diſeaſed, with, I doubt not, an internal caries, (for I have diſſected ſuch caſes, and kept in preparation very long, a ſhoulder joint thus diſeaſed internally, which betrayed no outward appearance of diſeaſe,) and who had excruciating pains, a

total lameneſs, a ſingular emaciation of the whole member, and who, though he could mount his horſe, could not endure the motion of it, even at a foot pace, was ordered by the phyſicians he laſt conſulted, along with various other preſcriptions, to have his arm turned and wrought backwards and forwards by his ſervant with all his ſtrength. He fainted more than once, under this diſcipline, and fortunately was not able longer to endure what muſt have killed him in the end; by completing that caries of the joint which was at that moment juſt remediable. He came from Ireland, and put himſelf under my care, and by a courſe of ſtimulant fomentations, by bandaging his arm to his ſide with rollers, as cloſely as if it had been fractured, and by renewing cauſtic iſſues all round the acromion proceſs, and head of the ſhoulder, and keeping them running for ſix months, he is now almoſt entirely cured. His arm, notwithſtanding the ſtricture of the bandages, has recovered its fleſh and firmneſs; he can raiſe it now without pain, and finds that he could uſe it with confidence: but, I think it right for a limited term to keep him ſafe, with the arm ſlung, and without motion, till every tendency to diſeaſe is gone.

A young lady, whoſe arm I have been obliged to amputate, fell, at the age of fifteen, from a table and ſprained her elbow joint. The immediate pain was juſt ſuch as is uſual on ſuch ſlight accidents; it ſubſided, and there remained only that dead and heavy pain and ſtiffneſs of the joint, which indicates that the ligaments and perioſteum are not yet relieved from the inflammation, and which requires ſtimulant fomentations; perhaps a cauſtic iſſue, and perfect reſt: what was directed? Why? that ſhe ſhould carry all day long, a heavy dreſſing-iron in her hand, to ſtraiten the joint by the continual extenſion, and that ſhe ſhould, by frequent exertions of ſwinging this load backwards and forwards, with the help of a ſervant to twiſt and turn the joint, try to recover the free motion of it. This imprudence has almoſt coſt her her life: the internal inflammation was never permitted to ſubſide; the joint ſwelled, burſt out in fœtid ulceration; the bones and the joint became completely carious; paroxyſms of inflammation, new ſuppurations, and weeks of excruciating pain before the burſting of each abſceſs, reduced her to the loweſt extremity of weakneſs: She had hæmoptyſis and every appearance of confirmed hectic, and approaching death, when a conſultation dictated the amputation of the arm as the only poſſible means of ſaving her. Since the operation, and even before the adheſion of the ſtump was complete, ſhe had, by pleaſant

ſleep, and the return of appetite, recovered her ſtrength and freſhneſs of complexion, and is now in perfect health.

Such errors are ſo commonly and thoughtleſsly committed, that they are as it were contagious; we do what we ſee daily done before us, without thought or reflection, which makes a document of this nature, on an ordinary occaſion, of no ſlight importance to the young ſurgeon.

DISCOURSE IV.

ON TUMORS OF THE NOSTRILS, GUMS, AND THROAT.

THOUGH polypus is one of the moſt loathſome and fatal diſeaſes, it is deſcribed in terms little ſuited to convey this idea to the young ſurgeon; who, while he reads a ſyſtematic author, or hears a lecturer talk in ſlight and familiar terms of the diſeaſe, and its cure, little ſuſpects the diſmal ſcenes which are paſſing in the chambers of the ſick, and puts his hand with, little forethought or prudence, to operations the moſt difficult for a man of experience, the moſt impoſſible for an unſkilful perſon to perform.

How this levity of manner ſhould be explained, I have been at times doubtful, and am now perhaps uncharitable; but I could not eſcape obſerving, that in the works of ſyſtematic writers, this appears ſo ſimple, ſo trivial, ſo harmleſs a diſeaſe; it is repreſented as ſo mild in its ordinary, and ſo incurable in its more malignant form, that the chief care of the ſurgeon ſhould be, to make a juſt prognoſtic, and act with reſerve and prudence. But thoſe who have tranſmitted to us the moſt faithful records of their caſes, repreſent a far different ſcene. Polypus appears, in their juſter pictures, to be one of the moſt horrible, the moſt incurable diſeaſes. In writings of ſyſtematic authors, all ſeems ſimple and harmleſs, and the methods of cure are trifling and temporizing. In the works of original authors, the methods are rude, violent, and unrelenting: rather than not unroot the tumor, they would burſt up the cells of the face, and deſtroy all the bones; and they deliberately debate theſe queſtions, whether we ſhould not ſplit up the noſtrils? trepan the antrum Highmorianum? and dig away the ſpongy bones? rather than fail to reach the roots of the tumor. Whether it be not allowable to perform bronchotomy, and by opening the trachea procure free breathing for the patient, while theſe more cruel operations are performing? This is a text, theſe are diſcrepancies, on which it becomes us to comment. Thoſe who have heard and repeated the ſaying, that polypus is in general a mild diſeaſe, have of courſe believed that theſe are caſes of peculiar malignity; that there are, certain polypi which the ſurgeon need not diſturb, and ſhould not tamper with, and others which he aſſuredly cannot cure.

But were this conviction ever brought home to the mind of the ſurgeon, then ſhould his good offices be at an end; ſurely we muſt not in any caſe pretend to meddle with a diſeaſe, which, if mild in its ſpecies, we ſhould not irritate; which, if malignant, we cannot cure? But I have ſome experience in this line of practice, and ſome judgment in this department of reading; and have ſtrong ſuſpicions of ſomething wrong, if not unfaithful, in theſe oppoſite repreſentations. Polypus is never mild, nor ever malignant; time, and the natural growth of the tumor, and the preſſure it occaſions within the ſoft and bony cells of the noſtrils and jaws, muſt bring every polypus to one invariable form, in its laſt and fatal ſtage. Thoſe who are employed in recording caſes on unqueſtionable facts, give us the true and only picture of diſeaſes, they ſpeak of none which they have not ſeen; but ſyſtematic authors, obliged to explain each diſeaſe in its order, give deſcriptions of diſeaſes widely diſtant from truth, deſcribing what manifeſtly they have not ſeen, and explaining, without the ſlighteſt remiſſion of their wonted confidence, what they have not learned and cannot know. Whatever you might learn, (yet that would be in an irregular and dangerous way) from books of caſes, be aſſured you might read thoſe ſyſtematic authors, (which I might name, I hope, without envy, and which I allude to without malice,) from ſun-ſet until ſun-riſe, without conceiving the very ſlighteſt notion of the diſeaſe I am now to ſpeak of.

Polypus is indeed a dreadful diſeaſe; but like every other, it becomes ſo by a ſlow progreſſion, and advances by gradations eaſily characteriſed, and which you will do well to mark. It is deſcribed as "a ſmall and pendulous tumor, projecting in the noſtril, void of pain, attended with no worſe ſymptoms than watering of the eyes, and ſneezing. ſometimes ſoft, ſometimes firm in its texture, and moving backwards and forwards with the breath. You would imagine nothing more ſimple than to nooſe ſuch a tumor with a thread, or pull it away with forceps.

And ſo indeed is every polypus in its early ſtages, a ſmall, tight, and moveable tumor, attended with ſneezing, watering of the eyes, ſwelling in moiſt weather, deſcending with the breath, but eaſily repreſſed with the point of the finger, void of pain, and in no ſhape alarming; and it is eaſily extracted too, ſo as for a time to clear the paſſage for the breathing! Yet this little tumor, ſimple as it may appear, is the germ of a very fatal and loathſome diſeaſe; and this eaſy extraction, the very cauſe, often, of its appearing in its moſt malignant form: the more eaſily it is extracted, the more eaſily does it return; and whether careleſsly extracted, or altogether neglected, it ſoon returns; and when it does return, it has not in truth

changed its nature, it has not ceaſed to be in itſelf mild; it is then to be feared, not from its malignity, but from its preſſure among the delicate cells and membranes of the noſe: It ſoon fills the noſtrils, and obſtructs the breathing, and cauſes indeſcribable anxieties: the patient lies all night with open mouth; during ſleep he is haraſſed with fearful dreams; and when he wakes his mouth and throat are parched and dry. The tears are obſtructed, and the eyes become watry from the preſſure on the lachrymal ſac; the hearing is in like manner injured, by the preſſure of the tumor againſt the mouth of the Euſtachian tube; the voice is changed, and its reſonance and tone entirely loſt, by the ſound no longer paſſing through the cells of the noſe and face; the ſwallowing is in ſome degree affected by the tumor depreſſing the ſoft palate; the pains ariſing from ſuch ſlow and irreſiſtible preſſure are unceaſing; from the ſame preſſure the bones become carious, and the cells of the face and noſe are burſt up by its ſlow growth.

The tumor, in no long period, begins to project from the noſtril before, and at the arch of the palate behind; one noſtril grows wide and thick, the noſe is turned towards the oppoſite ſide, and the whole face, in conſequence of a riſing of the or other cheek-bone, becomes oblique; the root of the noſe, where it is ſet off from the forehead, ſwells and becomes puffy; the features tumid and flabby, the face yellow, and the parts round the eye livid: the patient is affected with headaches which ſeem to rend the bones aſunder, and with perpetual ſtupor and dozing: The bones and membranes now plainly ulcerate; a foul and fœtid matter, blackened with blood, diſtils from the noſtrils, and excoriates them, and by paſſing partly down the throat, occaſions diarrhæa: The blood-veſſels next give way, and ſudden impetuous hemorrhages weaken the patient; the teeth fall from the ſockets, and through the empty ſockets a foul and fœtid matter iſſues from the antrum.

Now the diſeaſe verges towards its concluſion. The patient, conſcious that the tumor, lately ſo mild and moveable, has degenerated into a mortal diſeaſe, is reſigned to his fate; and no flatteries of his friends, nor ſoothing words from his phyſicians, can longer deceive him: in the night he ſtarts from his ſleep, in horrible dreams, and with a ſenſe of ſuffocation; and frequent hemorrages burſting out from time to time, reduce him to ſuch extremity of weakneſs, that for ſeveral days he is not able to crawl from his bed; and when he riſes from it, he hangs over the fire, cold from loſs of blood, pale as a ſpectre, his lips colourleſs, and his face like wax, yellow and tranſparent: He hangs his head forwards, reſting it on his hand, and moving it inceſſantly from ſide to ſide, from the intolerable pain, the ſaliva

diſtilling from his mouth, and the foul matter dropping from the noſe: in this ſtate he ſurvives a few weeks, deſolate and hopeleſs. During the laſt days of his of his illneſs, he lies in a ſtate of perpetual ſtupor, and dies lethargic.

Never can you thoroughly know this part of your profeſſion, nor arrive at a juſt ſenſe of the danger of this diſeaſe, till you have ſeen your patients thus ſuffering and dying; nor have you, from ſyſtematic books of ſurgery, the very ſlighteſt intimation, that ſcenes like theſe are paſſing in the chambers of the ſick. Perhaps, it will be ſaid, I wiſh it could be juſtly ſaid, theſe are very exaggerated pictures! they are, on the contrary, ſo very faithful and true, that I, who have witneſſed them many times, know not how they can be exaggerated: I have traced, as ſimply as I could deſcribe, with any regard to truth, the phænomena of this diſeaſe, from the ſtage reputed harmleſs and mild, to that reputed malignant. If, indeed, horrid ſymptoms could eſtabliſh the fact of malignity, that there is not to be found in all noſology a more malignant diſeaſe than this: but aneuriſm, though it deſtroys the thigh-bone, the ſternum, or the cranium, is not accounted malignant; neither is polypus malignant, though it deſtroys the cells of the face, and penetrates even through the ethmoid bone, to the brain. Theſe conſequences, as I ſhall infer from undeniable proofs, reſult merely from preſſure.

It is from nature, not from books, that I deſcribe the diſeaſe; my opinions and practice are formed by experience; on this ſubject alone has ſtudy proved of little uſe to me; nor will you wonder at this bold aſſertion, when you have made the ſame progreſs in yours. Never has the nature of this diſeaſe been inveſtigated by diſſection, nor its fatal conſequences depicted, except in the narrative of ſome horrid caſe, nor even there have its ſymptoms been repreſented as the natural and and invariable courſe of the diſeaſe! Confuſion and uncertainty pervade the writings of all our beſt authors, and miſguided and dangerous notions of its occaſional malignity, prevail among all ranks of the profeſſion. Do not allow yourſelves to imagine, that a little farther elucidation of theſe points, though preliminary and hiſtorical, can be trivial; it would neither be honeſt nor becoming to neglect or deſpiſe the writings of many celebrated authors; I will ſatisfy you from the indeciſive and heſitating language of the beſt and lateſt of them, ſpeaking, as they do, from theory, how much you are bound to prize every little leſſon I may be able to give you from actual experience.

I am well pleaſed to eſcape the invidious taſk, of declaring in any language of my own, how very imperfectly this diſeaſe is repreſented by all writers on ſurgery.

Mr. Pott profeſſes to give no more than a ſlight and haſty ſketch of the nature, and a few practical hints on the treatment of this diſeaſe; but his contempt of all that has been done by preceding authors, he ſeeks not to conceal. "Writers (he ſays,) tell us, and very truly, that it is a diſeaſe of the membrana pituitaria narium; that it has different ſeats, origins, and attachments; that it ſprings from the ethmoid bone, from the oſſa ſpongioſa, from the ſeptum narium, and even from the antra maxillaria: that it is hard or ſoft, pale or deep red, or ſometimes purple; that it is equal in its ſurface or unequal, large or ſmall, moveable or fixed, ſingle or multiform, painful or indolent; that it makes its appearance forward in the noſtrils, or backwards in the fauces, behind the uvula; and that it may be ſtrumous, venereal, or cancerous. When they have given us theſe general and merely definitive deſcriptions, they immediately proceed to the chirurgical treatment, or method of cure; which they tell us, is either by extraction or the uſe of eſcharotics; to which ſome have added ligature. They then give a general deſcription of the manner of uſing the forceps, of applying eſcharotics, or of paſſing the ſtring round it; and having provided ſtyptics for the ſuppreſſion of hemorrhagy, they leave every thing elſe to the reader's imagination, and to the practitioner's choice and judgment."

"From theſe accounts, thoſe who have not had much opportunity of ſeeing for themſelves, and who are thereby under a ſort of neceſſity of forming their opinions and regulating their practice from books, are induced to believe, that except in ſome few particular inſtances, where the diſtemper is palpably cancerous, all others are equally objects of chirurgical treatment, and therefore that if in the firſt inſtance, they can lay hold of the polypus with forceps, and in the ſecond can provide againg the hemorrhagy which they have heard ſo much of, they ſhall have nothing elſe to fear."

Such is the report of Mr. Pott, and, I believe it a true and faithful one, of all that had been thought and written by preceding authors; whether his immediate ſucceſſors have attained to more deciſive or manly conceptions, whether in imitating his ſtyle and manner, they have improved it, you ſhall judge by the following quotation, it is ſentence for a ſentence with ſome taudry additions, a parody, and a moſt ludicrous one, of the paſſage juſt quoted: "By ſome writers on this ſubject, we are led to conclude, that polypi are always of a *doubtful nature*, with reſpect to the event or termination of them. That for the moſt part they *are even of a dangerous nature*; and therefore that we ought to conſider every perſon in whom they occur as in *a hazardous ſtate*: whilſt others aſſert, that although they

may occaſionally be productive of *ſome inconvenience*, yet that they are very rarely attended with any kind of *riſk*.

" Some again are ſo extremely timid with reſpect to polypi, as to ſuppoſe that they ought never to be *meddled* with, and alledge that there is more chance of doing *harm than good* by any operation we can *employ* for removing them, whilſt by others we are told that they may be taken away with perfect ſafety.

" This difference of opinion reſpecting the nature of polypi, and of the effects to be expected from the remedies employed for them, has ariſen in a great meaſure from authors not having diſtinguiſhed the different kinds of theſe excreſcences with ſuch preciſion *as they ought to have done*."

Had I conceived the nefarious deſign of holding up to public ſcorn, all that the profeſſion have for centuries learnt or taught concerning this diſeaſe, I could have invented nothing like this, ſurely I ſhould never have been able to ſelect words ſo happily expreſſive of imbecility, irreſolution, and perplexity, nor have ventured ſo confidently to abuſe a whole profeſſion.

In this aſſuredly my immediate predeceſſors have excelled beyond all competiton, let them be reſponſible for the truth or delicacy of the picture; the ſole privilege I claim is that of explaining what I imagine to be worthy of your attention, uncontrolled by authority, and directed by experience alone. Surely it will be allowed me to traverſe in my own way, a province of our profeſſion as yet unaſſiſted by one ray of ſcience.

Ignorance is the parent of prejudice, and of all the pernicious prejudices ariſing from the ſtate of ignorance here diſplayed, that of imputing the laſt and mortal ſymptoms of the diſeaſe, to ſome original malignity, and terrifying the unpractiſed ſurgeon from his duties, by inſinuating, that, in trying to deſtroy a polypus, he is but tampering with a trivial tumor, ſo as to make its latent malignancy appear, ſeems to me the moſt blameable. Nor have I patience with thoſe, who affect to point out with a deciſive and confidential air, tokens and ſigns of malignancy, which, in a long courſe of experience, I have never been able to recognize. Dr. Samuel Johnſon, though his apophthegms were all involved in figure and antitheſis, proteſts againſt ſuch modes of expreſſion as are at once inaccurate and impoſing: " In all pointed ſentences," ſays Dr. Johnſon, "*ſome degree of accuracy muſt be ſacrificed to conciſeneſs*."

This very juſt thought I quote, becauſe I am going to preſent you with a whole ſyllabus of characteriſtic ſigns, ſaid to decide the mildneſs or malignancy of polypi.

I believe you will agree with me in thinking, that, on this occaſion, " *every degree of accuracy is ſacrificed to conciſeneſs*," and in pronouncing the whole paſſage to be the work rather of the imagination than of the memory or judgment; it is far too rhetorical in its form and language to be either correctly true or very perſuaſive.

" As far as my experience and obſervation go, the polypi which begin *with*, or are preceded, *by* conſiderable or frequent pain in the forehead and upper part of the noſe, and which, as ſoon as they can be ſeen, are either highly red, or of a dark purple colour; *they* which from the time of their being firſt noticed, have never been obſerved to be ſometimes bigger, ſometimes leſs, but have conſtantly rather increaſed; *they* in which the common actions of coughing, ſneezing, and blowing the noſe, give pain or produce a very diſagreeable ſenſation in the noſtril and forehead; *they* which, when within reach, are painful to the touch; or which, upon being ſlightly touched, are apt to bleed; *they* which ſeem to be fixed, and not moveable by the action of blowing the noſe, or of deriving the air through the affected noſtril only (where the polypus is only on one ſide,); *they* which are incompreſſibly hard, and which, when preſſed, occaſion pain in the corner of the eye, and in the forehead, and which, if they ſhed any thing ſhed blood; *they* which, by adheſion, occupy a very conſiderable ſpace, and ſeem to conſiſt of a thickening, or of an enlargement of all the membrane covering the ſeptum narium; *they* which ſometimes ſhed an ichorous, offenſive, diſcoloured diſcharge; and *they* round *whoſe lower part*, within the noſe, a probe cannot be eaſily and freely paſſed, and that to ſome height, ought not to be attempted at leaſt by the forceps, nor indeed by any other means with which I have the good fortune to be acquainted, and this for reaſons obviouſly deducible from the nature and circumſtances of the polypus. On the one hand, the very large extent and quantity of adheſion will render extirpation impracticable, *even if the diſeaſe could be comprehended within* the forceps! which it very frequently cannot, and, on the other, the *malign nature* of *the diſtemper!* may render all partial removal, all unſucceſsful attempts upon it, and indeed any degree of irritation productive of the moſt diſagreeable conſequences.

" But the polypi which are of a paliſh or greyiſh light brown colour, or look like a membrane juſt going to be ſloughy; *they* which are ſeldom or never painful, nor become ſo upon being preſſed; *they* which have appeared to be at one time larger, at another leſs, as the air has happened to be moiſt or dry; *they* which aſcend and deſcend freely by the action of reſpiration through the noſe; *they* which the

patient can make to deſcend by ſtopping the noſtril, which is free, or even moſt free, and then deriving the air through that which the polypus poſſeſſes; *they* which when preſſed give no pain, eaſily yield to ſuch preſſure, become flat thereby, and diſtil a clear lymph, and *they* round whoſe lower and viſible part a probe can eaſily, and that to ſome height, be paſſed, are fair and fit for extraction; the polypus in theſe circumſtances frequently coming away entire; or if it does not, yet it is removeable without pain, hemorrhage, or hazard of any kind; the ſecond of which circumſtances I can with ſtrict truth affirm, I never yet met with when the diſeaſe was at all fit for the operation.

"Of the benign kind of polypus fit for extraction there are two ſorts, whoſe principal difference from each other conſiſts in their different origin or attachment,"* &c. &c.

My knowledge, like this author's, has been practical; yet of theſe characteriſtic marks, there is not one which I can aſſimilate with my recollection of what I have ever felt or imagined, either while grappling with the diſeaſe in the living body, or diſſecting it after death. To me theſe diſtinctions are unintelligible or nugatory, and, to the young ſurgeon, extremely dangerous: they ſeem to relate not to any particular ſpecies of polypus, but to the ſtage or period of its progreſs: and I am conſcious that it is a great act of duty to free you from a prejudice too natural not to be common, and too pointedly enforced by the authority of this juſtly celebrated writer to be longer a matter of indifference. The profeſſion is naturally fond of ſuch diſtinctions as enable us to make a juſt prognoſis, and ſave ourſelves from compromiſing our individual character by tampering with incurable caſes. The ſlighteſt ſuggeſtion of this nature lays ſtrong hold of the imagination of the young ſurgeon, and there is both in the ſubject and in the manner of Mr. Pott's diſcourſe, ſo inſinuating an air of natural ſagacity and worldly prudence, that we know not how to deviate from his precepts.

But let us reflect impartially on theſe marks of malignity, and the precepts they tend to enforce: chiefly they are deſigned to impreſs the young ſurgeon with fear, not of doing wrong, for that he can hardly be accuſed of who puts his hand to a diſeaſe invariably mortal, but of his own precious reputation, which is indeed a vulnerable and a ſenſible point. The young practitioner is counſelled to be exceedingly careful in examining into all the circumſtances previous to his undertaking

* Potts's Works.

a cure, " leſt he ſhould find too late that he has gone too far to recede *; and there are few, I fear, upon whom ſuch a maxim will be entirely loſt. Were this doctrine true, the fair and logical concluſion muſt be this: " That polypus is a diſeaſe which, if mild, ſhould not be tampered with, if malignant, cannot be cured." Wherever theſe terms of *benignity*, and *malignity*, are arbitrarily and capriciouſly applied to a ſimple tumor, the ſurgeon has a ready apology for every dereliction of duty, as well as for every blunder in performing it: if a polypus be ſmall, ſoft, and moveable, then it is mild, and ſhould not be teazed; if larger, and of courſe accompanied with pain, it ſhould not be tampered with, for that is likely to change its nature; but if already large, and accompanied with caries of the bones, then it is plainly cancerous, and no judicious man will touch it even with a finger! If, having made ſome ungainly attempts to extirpate a polypus, he has manifeſtly failed, ſtill nothing can be judged amiſs in his conduct, except his prognoſis, it was not quite ſo mild or ſimple as he believed, it had a malignant character, and could not but grow again! If it be in the laſt ſtage, big, prominent, painful, accompanied with a profuſe diſcharge of ichorous and fœtid ſerum, with hemorrhages which threaten life, its malignant and cancerous nature is indiſputable, and the ſurgeon is by no means called to riſk his reputation, where there is ſo ſlight a chance of ſucceſs. Then the uſual and relentleſs policy is practiſed, and the patient amuſed with converſation, ſent to a diſtance, or referred to other and better advice, till his caſe is too deſperate to admit of any attempt.

It is not thus I would have you judge of this diſeaſe, nor moralize on the duties of your profeſſion, in a caſe where, without your help, the patient is ſure to die. I ſhall demonſtrably prove to you that polypus is a tumor in itſelf indolent and harmleſs; that it is no farther malignant than as it does, by univerſal and irreſiſtible preſſure in the latter ſtages, deſtroy the bones: that circumſtances determine the growth, and the more or leſs rapid growth, determines the fate of the patient: and I ſhall, I doubt not, prove to your conviction, that it is far better to ſuffer the ſalutary pains of operation and cauſtic, than the unavoidable tortures of a diſeaſe, which, as ſoon as it becomes painful, is incurable. You are, by every law, moral and profeſſional, bound to continue your good offices to your patient, while he conſents to ſuffer, or there remains the ſlighteſt hope of ſucceſs. While the doctrine of benignity and malignity, (and theſe terms are repeated in every page of Pott

* Pott, page 223.

and other writers,) is acknowledged, while the ſurgeon pronounces every incipient polypus mild only, becauſe it is ſmall and as yet harmleſs; and every polypus malignant which has attained a conſpicuous ſize and more ſolid texture, and begins to affects the bones; while he neglects the beginnings, and ſhuns all concern in the lamentable concluſion of the diſeaſe, no patient's life is ſafe.

Yet with all theſe diſtinctions of mild from malignant polypi, and endleſs injunctions not to tamper with the diſeaſe, no author can refrain from praiſing that operation, whether by ligature, forceps or cauſtic, to which he is moſt favourably inclined; and in ſuch familiar terms are the ſeveral ſtratagems for reaching the roots of the tumor deſcribed, that I know not how the young ſurgeon can eſcape a deception ſo naturally ſuited to the complexion of an ardent and inexperienced mind. It is impoſſible to read the boundleſs commendations laviſhed by each author on his own peculiar operation, without being perſuaded of its efficacy, and imagining beſides a thouſand other ways, the leaſt perfect of which will equally ſucceed: but there is a ſad diſappointment when we put thoſe inventions to the teſt of actual practice. Inſtruments and methods of cure have been imagined in the cloſet, by men who have not even introduced a finger into the noſtril, much leſs felt the infinite difficulty of caſting a nooſe round a polypus; and the reſult is, that, while theſe methods are very ſeemingly perfect, declared by their inventors to be infallible, and allowed by all to be ingenious, they are altogether unavailing when put to the teſt. The young ſurgeon finds theſe practices ſo deſcribed in books, that he thinks of nothing but the admirable ingeniouſneſs of the invention, nor can he admit a doubt, that he can introduce his probes, his tubes, and his catgut or wires, ſo as to nooſe the tumor: but when he goes to grapple with the actual diſeaſe, and while he is ſtruggling to apply his wires, the noſe is ſtreaming with blood, the patient ſtaring and ſtruggling as if in the act of ſuffocation, the tubes and forceps are thruſt perſeveringly into the noſtrils and throat, the forceps are next driven deeper into the noſtrils, the blood ſtreams again, and the pendulous parts of the polypi which are more prominent in the noſtrils, are bruiſed and mangled, while their roots are left entire, and only fragments of the tumor mixed with the clots of blood, are found upon the clothes. The patient terrified, ſickened, and ſpent with hemorrhagy, prays for ſome ſuſpenſe of his ſuffering, at the moment when the ſurgeon begins to be abaſhed at his ill ſucceſs; he deſiſts, for a while, from farther violence, but the ſame unſucceſsful operations are repeated from time to time, and if but the ſlighteſt breath of air paſs through the noſtril, he takes advantage of that ſeeming

ſucceſs, and introducing bougies or a thick roll of lint, perſuades his patient that his condition will improve daily. But the patient, after a ſeaſon ſpent in vain and miſerable endeavours to preſerve the noſtril free, returns to town with carious bones, deformed features, a projecting polypus, a frame exhauſted with ſuffering, and eſpecially exhauſted by ſuffocation and want of ſleep: his life is threatened every moment by impetuous hemorrhages, and he is plainly beyond the help of better ſurgery.

God forbid that I ſhould impute ſuch negligence to a deſire of gain, or contempt of duty, to a haſte to ſucceed, or a vain deſire to appear ſucceſsful. Theſe are the conſequences merely of a deception, which no one who takes his ideas from books can well eſcape. The operation of nooſing a polypus, which I ſhall prove to be altogether futile; or that of extracting it with forceps, which I know by experience never can be perfect or ſucceſsful, are yet repreſented as perfectly effectual. The operation of nooſing a polypus is one which the young ſurgeon is taught to perform with all the ceremonies and circumſtances of an operation; and if it is but ſo performed, that the wire or ligature does not immediately drop away, all the inſtructions he has ever read or heard of ſeem to be fulfilled, though the tumor begins to project again in a few days. He believes the cure of polypus to be an operation to be accompliſhed at once, by a coup de main, while in truth it is a cure to be accompliſhed by various and perſevering methods. The operation of nooſing or extracting a polypus is far from being a ſplendid piece of ſurgery, fit to be exhibited in an operation room. I have never known an operator put on his ſleeves, and addreſs himſelf to the work with thoſe miſtaken notions; and in the hopes of viſibly unrooting the tumor with the forceps, or entangling it in a nooſe, who did not retire from the ſcene with confuſion and diſmay. The horrid ſcene which enſues, the quick reproduction of the tumor, and the caries of the bones, is not the effect of tampering with a malignant diſeaſe, but the natural progreſs of a tumor uninterrupted by operations ſo imperfect and mal adroit. Let no man attempt the cure of this diſeaſe whoſe ſole purpoſe is to ſhine as an operator; who has not perſeverance and diligence enough to try, ſucceſſively, every method, and humility enough to be contented with the happineſs of ſaving his patient by any means.

I verily believe, that none are more innocent than thoſe who deceive us by commending ſuch trivial operations, for they firſt impoſe upon themſelves. They invent an inſtrument or method indiſputably ingenious, and with all the ſim-

plicity in the world imagine, becauſe it is ingenious, that it muſt be uſeful. I believe the very reverſe of this might be proved by all paſt experience, in reſpect to ſurgical inventions; for the moſt curious and ingenious have invariably proved the moſt inefficient; and, if paſſing over the firſt inventor and his eulogiums, you inquire of the next who tried the inſtrument, you find it quite uſeleſs; or, if one have performed the operation, and it be left to another to report its ſucceſs, the reverſe is ſudden and mortifying. Speaking on this ſubject, I cannot help laying before you one example of this, to me the more ſtriking, as I remember how much I was delighted when a boy, with the piece of mechanical ingenuity which I am now going to explain: ſo much was I delighted, that in my admiration of the author's genius I contrived to forget his ill ſucceſs. The operation is related in the third volume of the Edinburgh Eſſays, Phyſical and Literary. "A man of the name of Daviſon, very far advanced in years, was admitted into the Royal Infirmary, with a voluminous polypus, which had its root near the epiglottis, lay within the œſophagus, and was occaſionally vomited up, when he was excited by emetics, or by thruſting the finger into the fauces. The polypus then occupied the mouth, extended to the fore-teeth, and appeared to conſiſt of four diſtinct lobes, ariſing from one root or neck. But the polypus, while it thus occupied the mouth, prevented the breathing of the patient, by covering the opening of the trachea; wherefore, having juſt ſhewn it to his ſurgeons, by vomiting it up into the mouth, he was obliged preſently to ſwallow it down again for want of breath. His ſpeech, his ſwallowing, and his breathing, were all ſo affected by this very voluminous tumor, that it became a very intereſting queſtion how to extirpate the tumor: and it was propoſed, that while the operation of bronchotomy was performed to give him breath, the nooſe, by the help of ſome very ingenious uſeleſs machines ſhould be caſt over the tumor, which latter part of the ſcheme was fulfilled in the following manner: A ring, mounted on a ſtalk, and having the thread deſigned for ligature concealed within the circle of the ring, was puſhed down into the fauces: the puſhing down of the ring excited the patient to vomit, and the ring ſo occupied the fauces, that when the tumor was vomited up it was driven through the ring; the ring was then puſhed harder down towards the root of the tumor; the ligature was then drawn tight; other inſtruments with wheels and pulleys for paſſing a double ligature, (the ſingle one not ſucceeding,) were next invented; and finally, the purpoſe was ſo effectually accompliſhed, that

the polypus was ſtrangled: he paſſed, by ſtool, lumps which he miſtook for clots of blood; but he paſſed alſo along with thoſe, the loop of the ligature with which the polypus was nooſed." It is, in ſhort, inſinuated in the ſurgeon's narrative, that the patient had paſſed the bulk of the polypus by ſtool; and it is directly affirmed, (by Mr Dallas the operator,) that "having, at the end of the month, ſent for the patient and examined his throat, and made him vomit, nothing preternatural appeared; and that, having preſented himſelf at the diſtance of eight months at the infirmary, on account of a common cold with which he had been lately ſeized, he, upon being examined, *ſeemed to be entirely free from any ailments of the polypous kind.*"

Such, and ſo circumſtantial is the narrative of this ingenious invention, and of its ſucceſs; and it is ſupported by all the uſual apparatus of names, dates, conſulting ſurgeons, operation room, ſtudents, &c. Hear now how a plain tale puts this down; hearken to the fate of a poor ſoul (in the month of April, 1765) who was declared thus entirely free in April 1764 "of all ailments *of the polypous kind.*" "I was informed," ſays Dr. Monro, "that James Daviſon had died in the Royal Infirmary, to which he had returned a few weeks before that, very feeble and emaciated, as for ſeveral months paſt he had not been able to ſwallow any ſolid food, and even ſwallowed fluids with much difficulty; the polypus had not however been ſeen by the ſurgeons who had examined his throat.

"On diſſecting his body, the æſophagus was found to be greatly dilated, by a very large fleſhy excreſcence or polypus, which grew out from its fore-part, by a ſingle root, about three inches lower than the glottis, but was ſplit at its under part into ſeveral lobes, the largeſt and longeſt of which reached down to the upper orifice of the ſtomach." So untrue is the tale told by a man who never deſigned to deceive! Judge, then, how dangerous it is to believe, where there is no other evidence than that of the inventor, and where the cunning of the mechaniſm is ſo apt to paſs for a demonſtration that it muſt be ſucceſsful. Believe me it is ſafer to doubt; it will be found by all paſt experience, that the moſt ingenious and complicated ſchemes are apt to fail in exact proportion to the ſeeming ingenuity of the invention. I can venture, on my own authority, to aſſure you, that the ring of Hildanus, the tubes of Levret, the probes and other inſtruments by which, as later authors aſſure you, it is ſo eaſy to apply the nooſe, and ſlip it up to the very root or pedicle by which the polypus hangs: the very inſtruments

and methods which you have taken moſt delight in practiſing will fail you.

I have ſhewn you with how little reſerve our beſt and moſt judicious writers have declaimed on the ignorance of the profeſſion, not with the deſign of claiming a like indulgence for myſelf, but to obſerve the cauſes of this ignorance. The blame of wilful ignorance were very ſlight indeed, did it relate to that only which conjecture can ſupply. In reſpect to the imagined benignity or malignity of polypus, to the preferable manner of nooſing, extracting, or cauteriſing it, authors may conjecture the moſt oppoſite things, with a nearly equal chance of blundering on the truh; but there are ſome things ſo eſſential to be known, that it is indecent to conjecture. Would you believe, that to this bleſſed hour, every thing relative to the ſtate of the paſſages, or the ſeat of the tumor, is a matter of abſolute conjecture? It is conjectured that polypus uſually ariſes from picking of the noſe! It is conjectured that it has its root in the membrane covering the ſpongy bones! It is conjectured that it hangs in ſuch a direction as to be eaſily nooſed! It is conjectured to be ſome times cancerous, from its peculiar and innate malignity, and that ſuch malignity may be diſtinguiſhed by the colour and conſiſtence of the tumor! Every ſtep of theſe conjectures ſhould have been aſcertained beyond a doubt by diſſection; yet every link in this chain of conjecture is very remote from truth; when the diſeaſe is inveſtigated by diſſection all theſe prepoſſeſſions vaniſh.

I am now to enter upon the anatomical inveſtigation of this ſubject, and to ſpeak of the origin, form, and effects of polypus; a ſubject which will admit of no conjecture; of the manner in which the tumor preſents itſelf in the paſſages of the noſtrils and throat; and how it may be ſucceſsfully grappled with, a ſubject ſurely of the higheſt importance to the practical ſurgeon.

I affect not to purge the ſcience of every prejudice, but thoſe which have a direct relation to our ſubject in any practical ſenſe, I like to treat of freely. Firſt, that a ſmall and apparently trivial tumor of the noſtril ſhould be aſcribed to the common and unſeemly practice of picking the noſe, is far from being particular; and were this reported merely to frighten boys from unſeemly practices, I ſhould feel little diſpoſed to refute it. That the vulgar, who know nothing of the noſtril but what they feel with the finger, nor of polypus but what they ſee projecting, ſhould ſay this, is quite natural; but when a perplexed and buſy creature, in writ-

ing about ſurgery, thinks it his buſineſs to deſcribe every thing, and to account for every thing, and ſeriouſly warns us of the ſad conſequences of picking and blowing the noſe too forcibly, and how it breeds polypus! why, the thing becomes irreſiſtibly ludicrous; and by conveying to the young ſurgeon incorrect notions of the place and effect of the polypus, and of all his future operations, it acquires a degree of importance. I do believe that there is not in all our books, recent or antique, a piece of pathology fit to match that which I ſhall now tranſcribe. It is a full and true account of the manner in which the membrana Schneideriana grows, by mere blowing and picking of the noſe, into a polypus! "Polypi, of a ſofter nature, we generally imagine, are produced by a mere diſtenſion or relaxation of the membrana Schneideriana. When any portion of this membrane becomes inflamed, either by the effects of cold, or from external violence, if in this ſtate any part of its ſurface is ruptured, corroded, *as frequently happens from picking or blowing the noſe too forcibly*, a degree of weakneſs or relaxation is thus produced, which *is apt to terminate in a fulneſs or prominency of the parts immediately affected*; and this being increaſed by every ſucceeding cold, the diſeaſe we are now conſidering *comes in this manner to take place.*" And this author further informs us, that, "in almoſt every caſe of polypus, a local injury may be *traced* as the cauſe," (i. e. that the diſeaſe may be re-traced to ſome local injury,) "and from every circumſtance relating to the diſeaſe, we conclude that it is always of a local and circumſcribed nature." My anatomical reſearches and ſurgical experience teach me the reverſe of this; nor can I imagine how even one writing at a venture *about* ſurgery, could imagine this diſeaſe, polypus, to have any relation to picking the noſtrils, nor how one, who had only heard ſomething about the diſeaſe, could ſuppoſe it to conſiſt in a local or ſolitary tumor. I have not above three or four times in my life ſeen the polypus ſolitary; and uſually have found both noſtrils are affected. There is a moſt dangerous prejudice connected with this error, viz. that the polypus is not only tangible, but its root acceſſible to the finger, ſince cauſed by the intruſion of it. The moſt impatient finger could never reach that part of the noſtril where polypus has its ſeat, for that is deep and high in the noſtrils, towards the throat, and near the opening of the Euſtachian tube. The finger can be admitted no deeper than the cartilaginous wing of the noſe extends, and can hardly touch the anterior point of the lower ſpongy bone. The anterior and poſterior chambers of the noſtril are ſeparated from each

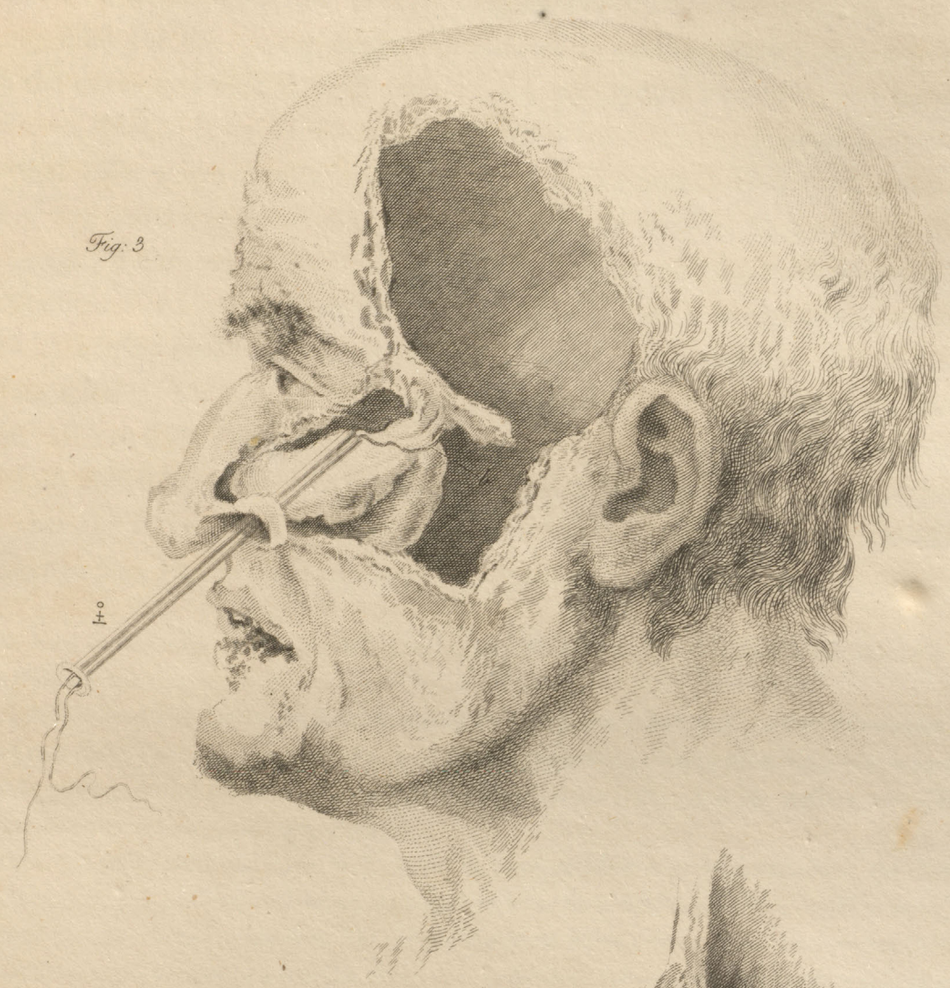
other by a narrow ſlit, which the finger can never paſs; that opening * is ſomewhat of the carved form of the ſlit in the ſounding board of a violin, and the intruſion of the anterior point of the ſpongy bone, which is the point that encounters the finger when thruſt into the noſtril, gives it this peculiar ſhape. There is a little opening (a) above, and another (b) below this projecting point of the ſpongy bone; through theſe the heads of the polypus project; one generally fills the opening above the ſpongy bone, (a plans No. 2,) another polypus (b) uſually fills the ſpace below; there they hang pendulous, and are forced ſometimes through this opening by the breath puſhing them down very low; at other times they are retracted by drawing in the breath; but how very diſtant this tangible part of the polypus is from its root, and how long the tumor uſually is, I ſhall next prove to you. The very proof of this is diſſection; and if what I have deſcribed be true, you will find it obvious in the drawings, to which I next appeal: In theſe you will obſerve, that all the polypi are long and pendulous, and only bulbous at the extremity where they are felt with the finger. You will obſerve, that in conſequence of their great length, the roots are at a great diſtance from the pedicle or ſtalk from which they grow, that their bulbous extremity cannot be felt at all times, their roots never, for they are in the higheſt and narroweſt part of the noſtril. You will obſerve, that polypi, which, were they produced by picking the noſe, or any local injury, would be ſolitary, are, on the contrary, numerous beyond any conception you can have formed †.

* See Plans No. i.

† It is by no means a matter of ſlight importance to aſcertain this point. We know by diſſection, and by much ſad experience, that polypi are rarely ſolitary; that the whole membrane is diſeaſed; that the cells as well as the paſſages of the noſe and throat are ſtudded with polypi of various ſizes. The melancholy caſe which I am now to tranſcribe, or rather to epitomiſe, from one of the moſt celebrated writers on this diſorder, is a proof how rarely it is local, how impoſſible that it ſhould be produced by picking the noſe or any ſuch injury, how univerſally the membrane is diſeaſed.

"A young man," ſays Manné, "of twenty-ſeven years of age, died at La Charité. Three years after having the ſmall pox, from which period he had been afflicted with polypi in the noſe, a whole hot-bed of them (ſays the author), if I may be permitted to uſe the term, appeared. He had in the paſſages of the throat and noſe, in the antrum maxillure of each ſide, and in the frontal ſinuſes SEVEN POLYPI in all. His face was ſhockingly deformed; he had a great bulging at the root of the noſe; his eyes were removed from each other, by the ſwelling, to three times their natural diſtance, and ſeemed burſting from their ſockets; the noſtrils were expanded, and the noſe flattened and extended; while the cheek bones were raiſed to the level of the noſe, and the face and head ſwelled to an enormous ſize. The ears were obſtructed on either

Fig: 3



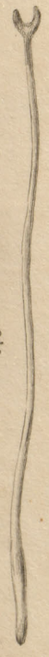


Fig: 2



Fig: 1



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Polypi hang forwards in the noſe, in a direction ſo unfavourable to their being nooſed, that I ſee it, from the preparation, as improbable as I have felt it in practice impoſſible for the young ſurgeon to ſucceed in nooſing them; and a practical fact is the point to which I ſhall particularly call your attention; yet let me acknowledge, that it is by experience alone that I have learned how difficult it is to nooſe that leſſer polypus which hangs forward in the noſe. Had I ſat down, like many of my betters, in the cloſet, to contrive ways of nooſing ſuch a tumor, I could have imagined nothing more likely to ſucceed than the common proceſs. I no more doubted than others, that the method which I found ſo ingenious, when deſcribed in books, could fail me in the act. Allow me to explain, firſt the drawing, No. 1, from which you will learn the actual circumſtances of theſe kind of tumors. Secondly, The plan, No. 3, which will illuſtrate this indeſcribable and unforeſeen difficulty of nooſing them. In this firſt drawing you cannot but remark, that the three polypi with which the noſtril is filled, marked the ſmalleſt, (a.) The next in ſize, (b,) and the third, (c,) hang from a point very high in the noſtril,

ſide; the tears flowed over the excoriated cheeks, and ſometimes fœtid pus burſt out from the fiſtula lachrymalis on either ſide.

"While his head and face were thus externally deformed, the palate of this miſerable creature was ſo depreſſed that it lay upon the tongue, and bulged ſo, that the lower jaw was depreſſed; the mouth kept perpetually gaping, ſo that the ſaliva diſtilled continually from his jaws, while the noſtrils were diſtended by the bulbous extremities of two larger polypi.

"In diſſecting his head theſe polypi were found to have occaſioned great devaſtation; the cheek was laid open by a crucial inciſion, and the upper maxillary bone ſeemingly annihilated, nothing being left of the walls of the antrum but a thin ſcale like the peeling of an onion: on opening the oppoſite cheek they found the antrum burſt open in a ſtar-like form, and on dividing the delicate membrane which cloſed this breach in the antrum, a thin and bloody ſerum exuded, and there projected from the cavity a ſmall portion of a very firm and elaſtic polypus of a red colour; and when, by cutting and tearing away the reſt of the bone, the tumor was found very large and quite inſulated, except at its neck, which was of ſuch dimenſions as to be eaſily embraced in the circle of the fore-finger and thumb. It reſembled a turnip in reſpect of ſhape; its lower end was bulbous and large; but its pedicle or immediate attachment was ſo exceedingly delicate that it ſeemed difficult to imagine how ſo great a tumor could grow, or even be nouriſhed, when formed, by ſo ſmall a root. It was no more than one line (the twelfth of an inch) in diameter, and of the ſame length. The coat of the tumor was ſmooth, delicate, not irregular nor warty; its ſubſtance was lardy, and the bottom of the cavity in which it was lodged formed one half of that concavity of the palate which preſſed upon the tongue. On opening the antrum of the oppoſite ſide, they found it occupied with a tumor expreſsly ſimilar in all points and circumſtances, in ſize, form, con-

and very far back, that their roots muſt be in the poſterior end of the upper ſpongy bone, under the ſocket of the eye, and not far from the opening of the Euſtachian tube. Of this you will be ſatisfied by looking to the drawing, No. 2, taken from the ſame preparation, hanging ſtill by the ſame thread, only turned round, ſo as to ſhew the back of the noſtrils; and here the ſame iron probe (d) is left in the noſtril. You may ſee how this noſtril (the right one) is dilated by the polypi. The ſeptum or partition of the noſtril (e) is inclined, by the preſſure, towards the left. The poſterior opening of that noſtril into the throat, marked (f,) is greatly dilated; nor muſt you wonder at this, for the tumor was once large and bulky. Tumors which, in the dead body, are flat, long, and corrugated, by long immerſion in ſpirits, may not only have filled but diſtended the noſtril, and dilated it permanently: (g) marks the center of the ſeptum greatly inclined to the left, and (h) marks the mouth or opening of the Euſtachian tube; the tumors taking their origin betwixt this and the noſtril, marks the point of their origin to be the upper ſpongy bone; and the patient ſuffering deafneſs from the preſſure of the polypus againſt this opening, ſhows, that ſlender as the tumors appear in this preparation, they had,

ſiſtence, and colour, and in its effect uponthe adjacent parts. Upon opening the two frontal ſinuſes there was found on each of them a tumor of half the ſize of thoſe which diſtended the antrum. Theſe alſo had each its delicate pedicle, which grew from the margin of that little hole by which the frontal ſinus of each ſide communicates with the noſe; the partition betwixt the ſinuſes was deſtroyed, thence they formed but one general cavity; from this cavity, as from the antra Highmoriana, a little of a yellowiſh ſerum iſſued, upon their being opened; and here, as in the antrum, the pituitary or Schneiderian membrane was much thickened. Theſe tumors were ſpherical, but the mutual preſſure of the tumors had flattened each upon that ſide when it encountered its fellow. To have a more perfect view of the effects of this preſſure on the adjacent parts, they were obliged to diſſect out the eyes, and then it was ſeen that the eyes were diſplaced by the preſſure of theſe tumors which had made the inner ſide of each orbit bulge outwards; and upon opening the ſcull they found that a thin protuberance had actually compreſſed the brain, for the two hollows of the os frontis were convex and preſſed ſo inwards, that betwixt them the criſta galli was entirely concealed. Upon opening the throat behind the palate, three tumors, ſeemingly ariſing from one pedicle were ſeen projecting into the fauces.

"This may ſerve as a general analyſis of this unhappy caſe, and muſt ſuggeſt a doubt whether it may not, in circumſtances, be allowable and laudable to attempt the deſperate yet harmleſs operation of trepanning, or rather cutting open, with a ſtrong ſcalpel, the frontal or maxillary ſinuſes, diſtended, ſoftened, and become carious by the long preſſure of ſuch enormous tumors. It is lamentable to obſerve how unavailing every kind of operation muſt be where the tumors are thus numerous, and in how ſhort a period it runs its fatal courſe."

Fig. 2



Fig. 1



n The Antrum

o The Alveola or Socket of the Eye

Drawn by J. Bell.

Engraved by E. Mitchell.

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when the patient was active, and the blood in full circulation, been ſufficiently bulbous to occupy the whole circle of the opening, (i): (k k) marks the whole length of that ſlit-like opening, betwixt the ſeptum and ſpongy bones, which the finger can never paſs, and which, from its narrowneſs, occaſions the chief difficulty in managing inſtruments of any kind, and eſpecially thoſe tubes and probes which I am next to deſcribe. But while I am making theſe obſervations on the drawing, you cannot but remark the proof of thoſe peculiarities I have already taken notice of, viz. that polypus is not ſolitary; on the contrary, that the prediſpoſition is ſo ſtrong, that three or four polypi are often crowded in one noſtril, a circumſtance extremely unfavourable to the operation of the ligature, which, though in itſelf effectual, would, in a caſe like this, fail; for it would, in ſuch a caſe, require to be applied four ſucceſſive times; after each operation the breathing would be again interrupted; a tumor lying deeper would replace that which was extirpated, which would thence ſeem to grow again in a few days; for one tumor only is ſeen at once; a ſecond preſents itſelf as ſoon as the noſtril is cleared of the firſt; tumor after tumor preſents in ſucceſſion, and the operations ſeem endleſs and quite ineffectual. Beſides, while the polypi are numerous in one noſtril, it rarely happens that others are not formed or forming, which are alſo numerous. Polypi are uſually found at the ſame moment fit for operation in both the noſtrils, as appears in the right noſtril of this preparation, where (k k) repreſents a polypus long and flat, reſembling one of the nymphæ in ſhape, and hanging from the upper ſpongy bone (l); for in this preparation (m) marks the roof or upper part of the antrum Highmorianum opened, that part which forms the floor for the eye; the alveolar proceſs and teeth of the upper jaw are cut away, and of courſe the lower ſpongy bone is gone, and only the ſuperior one (l) left. In this drawing, then, the length of the polypi, their ſlender ſtalks and bulbous heads, their peculiar direction, viz. hanging forward in the noſtril, the ſtraightened condition of the neck of the tumor, and eſpecially the number of long ſtringy polypi occupying both noſtrils, are circumſtances, I doubt not, altogether new and unexpected. Now, you will judge, without any help of mine, how unlikely it is that picking the noſe ſhould ever cauſe this diſeaſe. "The moſt impatient finger (I have ſaid) can never (in picking the noſe) reach that point whence theſe tumors have their origin, nor the moſt dextrous operator puſh his finger ſo deep as to reach theſe roots. You will alſo judge how impoſſible it is that operations ſhould be ſucceſſfully performed only on that bulbous part of the polypus which can be touched

with the point of the finger; how difficult to apply a nooſe to the root of the tumor which lies ſo far beyond the narrow ſlit of the internal noſtril. Remember, that in all your operations, and eſpecially in the application of cauſtic to the roots of polypi extirpated by other means, your aim muſt be to reach a point nearly under the ſocket of the eye, in the deepeſt and higheſt part of the arch of the noſtrils, where the noſtril opens backward into the throat. Remember the length of a polypus, (a circumſtance which ſhall be demonſtrated by other drawings,) and that however low the bulbous part may deſcend, or be felt by the finger, it is only by puſhing your inſtruments deep, beyond the narrow cleft formed by the projection of the ſpongy bone, that you can do good.

Let me next repreſent to you, in explaining the plan No. 3. what I conceive to be the chief difficulty in applying the nooſe to ſuch tumors: the tube marked (♀), was invented by Mr. Levret, for the purpoſe of paſſing a ſilver wire as a nooſe, and of tightening the nooſe after being thus applied; and in the application of the ligature, which was new, and peculiar to Levret, he had no motive ſo much at heart as the guarding againſt hemorrhagy. This was a vain fear, for though I have ſeen dreadful hemorrhages in the laſt ſtage of polypus, I have never, in twitching away polypi with the forceps, ſeen a hemorrhagy worth regarding; I I have always kept a ligature in the noſtrils, and a plug in the mouth, ready to be drawn up, by the help of that ligature, into the poſterior opening of the noſtrils, but have not found occaſion actually to draw up the plug more than three or four times in my life; and then rather from fear than danger. The tube of Levret is thus uſed, the loop of the wire (b) is paſſed over the lower end or bulbous head of the polypus, and hitched higher, towards the root of the tumor, by puſhing the tube deeper and higher into the noſtrils, or others (I know not who, for ſuch probes are drawn in every book), adviſe us, after laying a nooſe of wire or cat-gut looſely about the tumor, to hitch it up to the root, where the tumor riſes from the bone, by puſhing it higher, firſt on one ſide, then on the other, by the help of the forked probe marked ♀. But when you look to the ſcheme or imaginary plan of ſuch an operation, figure 3d, you will foreſee much difficulty in accompliſhing it; for the tumor, long and ſlender as it always is, hangs in the direction in which you are to puſh the ligature; the ligature or nooſe, you never entertain a doubt, is to run as clean and eaſily along the polypus as a ring ſlips upon the finger, or as the ring of a window-curtain ſlides along the cord! but the truth is, that either from the polypus being forced backwards into the noſtril along with the

ligature, or by the hitching of ſome part of the nooſe againſt the inequalities of the polypus, or by the narrowneſs of the naſal cleft catching the wire, it certainly is not merely difficult to apply it, but impoſſible. I have ſeen ſuch an operation practiſed fifty times, by men of various degrees of ſkill, and ingenuity, ſome extremely awkward, ſome perfectly dextrous, but never have I ſeen this method ſucceed: if even the ligature hung two days by the polypus, ſtill the extirpation was but partial; uſually the ligature gets no hold on long and ſlender polypi, which hang thus forwards in the noſtril. Nothing, gentlemen, could tempt me, in a queſtion where I am to deliver, not an opinion, but a plain fact, to prevaricate or diſguiſe the truth, however unfavourable to myſelf; I have no curious nor cunning operation to ſubſtitute in place of that which I condemn; but I ſolemnly and impartially declare, that with my beſt and moſt ſincere endeavours to ſucceed, I have always miſcarried in attempting to catch a *naſal* polypus in a nooſe of wire or cat-gut; I have planned my little operations ſo cunningly, that I have imagined it impoſſible I ſhould fail, yet, in my beſt concerted ſchemes I have been foiled as completely as the moſt awkward perſon I ever ſaw attempt the operation. I ſhall ever therefore retain a ſuſpicion, that the method itſelf, rather than any want of addreſs on my part, is to blame.

If I am correct in aſcribing this difficulty to the direction in which the naſal polypus hangs, being the ſame with that in which the ligature muſt be drawn, my reaſoning will be confirmed, by the converſe of the propoſition being true, viz. that guttural polypi, thoſe which, in place of occupying the noſtrils, paſs backwards into the throat, are eaſily nooſed. This is an operation to the happy ſucceſs of which I can ſpeak with confidence as perfect, as my conviction is, that the operation juſt deſcribed never can ſucceed, or very rarely. When the polypus is ſingle, or when one polypus has arrived at ſuch a ſize, as to render whatever others may be behind it trivial; when the tumor, after having long filled the noſtril, projects from the poſterior opening of the noſtrils into the fauces, depreſſes the palate, hinders the ſwallowing as well as the breathing, and is both ſeen, upon depreſſing the tongue, and felt upon paſſing the fingers deep into the throat, firm, hard, and bulky: at this ſtage of its growth, when the ſurgeon moſt fears to grapple with ſuch a tumor, it is in truth the moſt manageable! it may be extracted with ſafety; its root may be cut acroſs by paſſing a curved knife along the noſtril, yet not without difficulty; and if there be an internal tumor which admits of extirpation by ligature, this is it. It is the only caſe in which I can with perfect confidence promiſe to apply

the nooſe, and where the tumor is thus viſible in the fauces, the ligature muſt be paſſed through the correſponding noſtril, hooked out from the fauces with a hook, or catched with the forceps, brought through the mouth beyond the teeth and lips, ſpread out upon the fingers, and by the help of the fingers (puſhed deep into the throat) paſſed over the bulbous part of the tumor, and then the wire being pulled back through the noſtril, it ſlides up to the root of the polypus, or near it, or may be placed pretty correctly by a little help. Now when thus drawn, the courſe of the ligature is tranſverſe to the direction of the tumor, and is perfectly effectual in its operation; for the good effects of a ligature, thus applied, I would willingly be reſponſible, having ſo very often performed it with unvaried ſucceſs. The plan No. 4. repreſents ſuch a guttural polypus (a), ſmall in its neck, very bulbous in its extremity, bulky and ſolid, ſo as to depreſs the palate, and ſo wedged in the upper part of the fauces, betwixt the fore-part of the vertebræ, and the bones of the face, as to cauſe almoſt total deafneſs, by preſſing the mouths of the Euſtachian tubes, and ſo expoſed to the operation of ligature, that having paſſed it, you might, in place of gradually twiſting and tightening the wire, by the help of the tube (b), twitch out the polypus by the roots, by ſheer force.

Experience, if ever you ſhould be ſo unfortunate as to have experience in this diſeaſe, will beſt refute the prejudice ſo long indulged, ſo often mentioned as an apology for ill ſucceſs, viz. the malignant nature of ſome polypi! If hemorrhages, pains, or a fœtid ichor diſtilling from the noſtril, are to be accounted tokens of malignity, every polypus muſt be malignant in its latter ſtage, for its firſt ill ſymptoms begin from the preſſure of the tumor againſt all the cells and ſpongy bones, and eſpecially the walls of the antrum Highmorianum; and its fatal concluſion proceeds from a total caries of the face. In all the preparations from which theſe drawings are taken, the proximity of the tumor to the antrum Highmorianum, or great cavity in the upper jaw-bone, is obſervable. In the drawing of polypus, No. 2. where the incipient polypus is ſeen hanging flap-like over an edge of bone, that edge is diſtinguiſhed to be the partition or thin plate of bone, which ſeparates the antrum from the noſtril. In the drawing of polypus, No. 3. where the ſmall incipient polypi (a a) are ſeen one in each noſtril, the poſterior openings of the noſtrils (b b) are already almoſt filled with theſe tumors, ſmall as they are. The great cavity of the antrum is marked on the left ſide (e); there it is cut entirely open. On the right ſide, though the bone is cut away, it happens by chance, that the very delicate membrane, or perioſteum, which lines this cavity, is ſtill almoſt









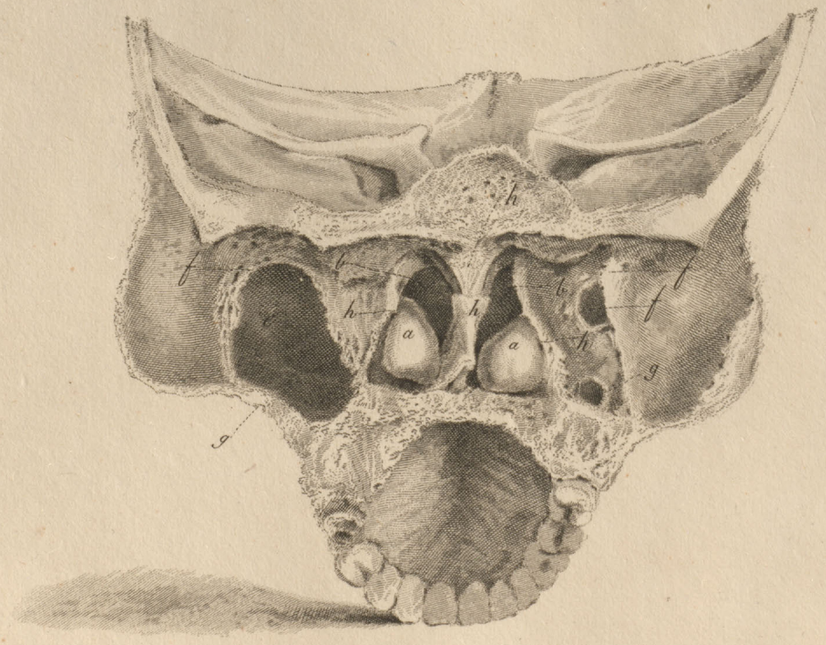




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DRAWINGS OF POLYPUS.

N° III



Drawn by J.Bell.

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Engr^d by E.Mitchell.

entire, and you ſee into the antrum only by two ſmall irregular breaches, (f g) in this delicate membrane. Thus explained, this little preparation ſeems to me of the higheſt importance to you, as giving you a clear and perfect conception of the original condition and final conſequences of tumors ſo ſituated; where the moſt ſimple, deſtroying the bones by its preſſure, muſt in the end ſeem malignant; for the bony parts and cells, as they ſtand related to the tumor, may be reckoned thus: firſt the ſeptum narium (h), or partition which divides the noſtrils all the way from their openings before to that point where each communicates at (b b) with the back of the throat. Secondly, the ſides of the noſtrils (h h), which though ſeemingly very firm and ſolid in this drawing, becauſe the jaws in this preparation are cut far back, are really very thin, eſpecially in the middle of the noſtrils, at that part where the lower ſpongy bone lies upon the ſide of the noſe: this plate of bone, as you perceive, divides the cavity of the antrum Highmorianum (e f g) of each ſide from the cavity of the correſponding noſtril; it is in ſhort the partition of the antrum, dividing that cavity from the noſtril; it is a plate of bone, actually as delicate as the os unguis; covered with delicate membranes, and very eaſily deſtroyed by preſſure; and it is here that the caries which proves fatal begins. In the caſe from which the drawing of polypus No. 4. is taken, after dreadful ſufferings on the part of the patient, I, in a ſecond and deſperate attempt to ſave his life, found (upon paſſing my finger deep into the noſtril in ſearch of the roots of the polypi), felt that this partition was deſtroyed, that my finger had entered, through ſharp and naked bones, into the cavity of the antrum, the walls of which were conſumed by caries, which ſoon proved fatal. But it is further to be remarked, (in this ſection) of the throat and noſtrils, No. 5. that the ſella turcica (i i), lies immediately above the cleft of the noſtrils, and the two anterior lobes of the brain lie in the hollows (k k), by the ſides of the ſella turcica; you have here then all the eſſential relations of theſe bony cells to the polypus, and muſt perceive, that as ſoon as the tumors (a a), fill the whole cavities (b b), diſtend them, and in the end preſs upon them, they will produce caries by ſuch preſſure, as ſpeedily as an aneuriſmal tumor: that ſuch caries will be long of affecting the ſeptum, becauſe it is maſſy, and yet can give way and be inclined to one ſide; but will affect more immediately the thin partition betwixt the noſtril and the antrum, and lay them into one cavity. The cribriform plate of the æthmoid bone, which lies immediately before the ſella turcica, and above the noſtrils, will be next affected; and indeed one of the earlieſt ſigns of polypus is a degree of ſtupor from preſſure on the brain; and one

of the moſt frequent and fatal concluſions of the diſeaſe is a continued coma, for ſeveral days preceding death. The drawing No. 6, is the drawing of the ethmoid bone, of a poor woman, who periſhed of this diſeaſe: her face was univerſally ſwelled; the root of the noſe, where it riſes from the forehead, was livid and gangrenous; ſhe lay ſlumbering for many days; ſhe could hardly hear, or be made to reply; ſhe only groaned out, in a low voice, "very ill;" and after death, the brain was found in a ſtate of gangrenous ulcer; and the upper ſpongy bones, whence the tumor had its origin, quite carious, and entirely abſorbed; the polypus itſelf was reduced to a ſoft and pulpy maſs, which, on maceration, diſſolved ſo entirely as to leave only a few ſtringy fibres adhering to the ſpongy bones; while the lower part of the brain was left expoſed, and the center of the ethmoid bone was open, its cribriform plate being quite deſtroyed.

But more frequently the upper jaw-bone is deſtroyed; the tumor makes its way into the antrum; the whole upper jaw-bone becomes carious; the teeth drop from their places; and a fœtid matter diſtils from their ſockets; and the patient dies, waſted by pain and hemorrhagy, as happened in the caſe of a fine young man of the name of Cameron, who put himſelf under my care, in the moſt inauſpicious circumſtances, and died in the greateſt miſery. The drawing, plate 2, repreſents the diſſection of his head, and eſpecially the origin of theſe polypi of which he died. Firſt you remark, that the polypi (a b) hung over the probe, and that c), under the probe, were long, ſlender, and firm; their roots you perceive, proceeded from under the ſocket of the eye. Secondly, you will remark, that from the ſeptum narium (d) to the line of carious bone (e), which marks the outſide wall or ſhell of the antrum, nothing intervenes, the whole cavity is occupied by the polypi; in ſhort, the antrum Highmorianum, and the noſtril, are become one wide cavity, in conſequence of the caries of the bones. Thirdly, you will remark, that though one only of the molares has dropped from its ſocket, the opening it has left (f) is wide, rugged and carious; in truth the antrum is ſo open at this point, that you could almoſt put the point of your little finger through the opening, ſo as to touch the polypi. But while the bones are thus carious, where are the tokens of cancer; are not thoſe polypi long, ſtringy, firm, and fibrous? are they not ſtill firm after long maceration? what difference can we find betwixt an incipient polypus, acknowledged to be mild, and this which has cauſed death? Are not theſe, though now ſhrivelled by the ſpirits, the tumors which from their bulk and preſſure dilated the noſtrils? Are not theſe tumors now, after the patient's death, ſtill hard

DRAWINGS OF POLYPI.

N°IV



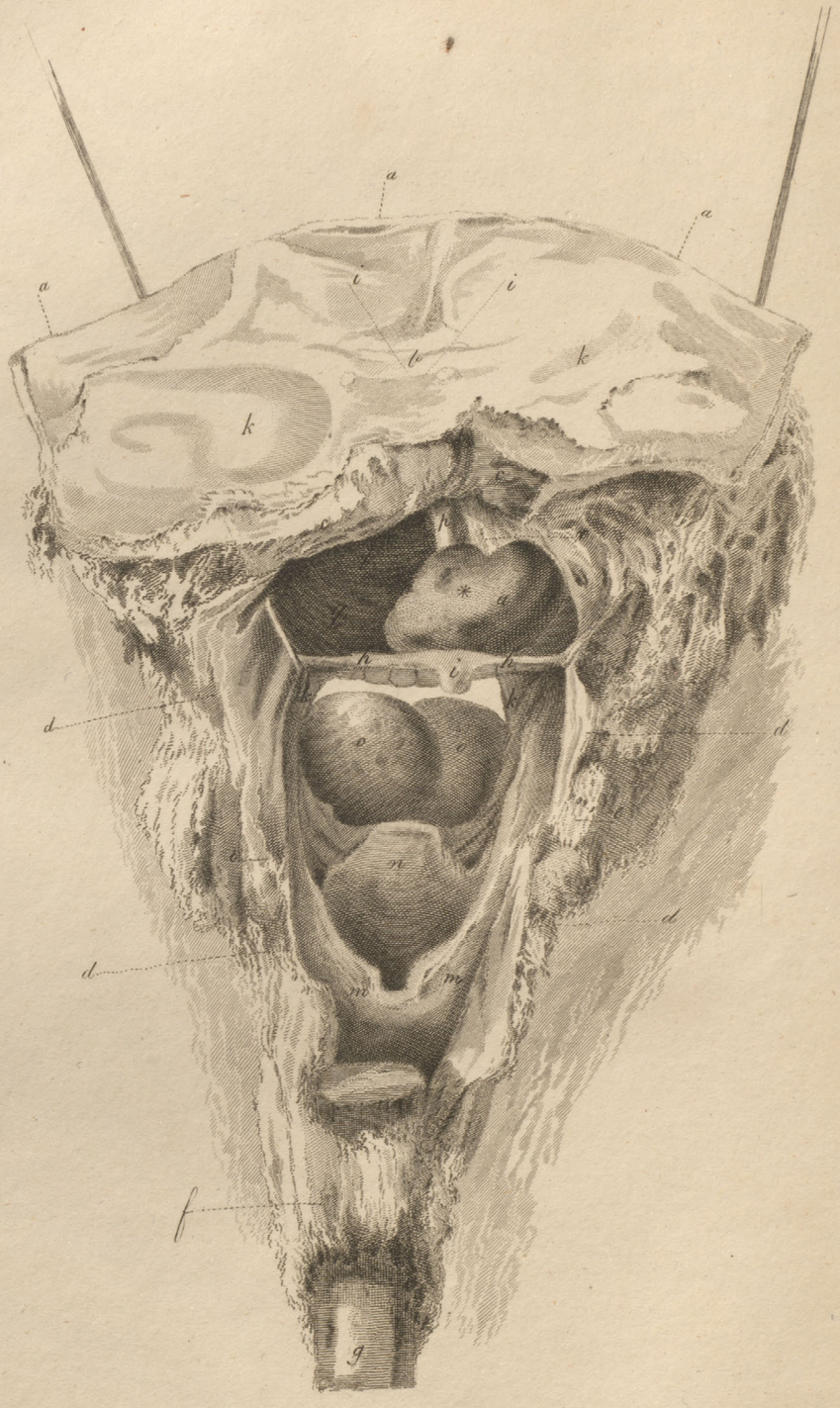
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DRAWINGS OF POLYPI.

N° V



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and firm, while the bone and cavities which contained them are deſtroyed? Such is the condition of theſe long and pendulous polypi, which ſhould, from their conſequences, have been pronounced peculiarly malignant: in the tumors themſelves there is no token of malignity; in the ſtate of the bones, there appears deſtruction enough to account for the fœtor, the pains, the profuſion of matter, and all the worſt ſymptoms of the diſeaſe, during life; and for the miſerable manner of the patient's death. In the drawing of polypus, No. 5, one great polypus (*) is ſeen from behind projecting over the ſoft palate, depreſſing the arches of the palate, filling all the back part of the noſtril where it opens into the throat, and cloſing of courſe entirely the mouth of the Euſtachian tube; and here you will obſerve how by this diſſection former reaſonings are confirmed; for in the drawing of polypus, No. 4. the probable effects of preſſure againſt the thin walls of the antrum, and the delicate ſpongy bones may be inferred, from the ſize and number of the polypi; but here, in drawing No. 5, the actual impaction of one ſolid polypus in the back part of the noſtril demonſtrates, firſt the effects ſuch preſſure muſt have upon the mouth of the Euſtachian tube; ſecond, the probable effects of its diſtending the bony part of the noſtril, and affecting the thin and delicate walls of the antrum.

Polypus has ſometimes, independent of any innate malignity, and rarely from its peculiar ſituation, a very peculiar aſpect, and runs its courſe more rapidly. I am confident, I have obſerved, that when polypus, which in its early ſtage, is uſually attended with no worſe ſigns, than ſneezing and running of the head, is attended with rheumatic and toothachy pains; when the ſide of the face ſwells, before the natural growth of the tumor ſhould produce this alarming change, and the cheek-bone particularly riſes, and is covered with inflamed and puffy integuments; when the inceſſant and acute pain is limited to one ſide of the face; when the teeth looſen, drop out ſucceſſively from their ſockets, and are followed by a ſanious and fœtid diſcharge, we may be aſſured of the polypus having one kind of malignity, viz. that it is confined within a narrow cavity, that it is ſeated in the antrum, that the cheek and jaw bones will become early carious, while the deſtructive preſſure is operating alſo in every other direction; and that the polypus being within the antrum, the operation of nooſing is not practicable, and no ordinary operation, nor common degree of violence is likely to be ſucceſsful in eradicating the diſeaſe. Thus far is early pain a ſign of greater malignity, or, in other terms, of that deſtructive preſſure, which in the end cauſes caries, hemorrhagy, and death.

One thing more I beg leave to obſerve: it ſeems to me that the prediſpoſition to diſeaſe is univerſal in the Schneiderian membrane; that the earlieſt appearance of the diſeaſe is, in general, ſwelling, eſpecially of that part of the membrane, which involves the ſpongy bones; that almoſt univerſally the diſeaſe is produced by cold; that many of thoſe who have been under my care, having got wet in riding, running, or other exerciſe, have had a ſudden and ſenſible cold, attended with violent paroxyſms of ſneezing, which has never for a moment ceaſed, till the polypus was perfectly formed, the breathing obſtructed; the particular character of the tumor, viz. that of moving backwards and forwards with the breath becomes perceptible, and the polypus, in ſhort, tangible with the finger. In the drawing of the little boy, plate 4, where the polypi are incipient only, they are flat and broad, have no pedicle, do not hang pendulous, but ſeem merely a general ſwelling of the membrane; in the drawings, No. 1, 2. the appearance is ſtill more particular, for while the complete polypi in the left noſtril are long, ſlender, and pendulous, the incipient polypus in the right noſtril is flat, membranous, reſembling one of the nymphæ in form; it has no pedicle, and ſeems a general ſwelling of the membrane: but as I hold it unqueſtionable, from the ſtate of the oppoſite noſtril, that this alſo would, in no long time, have become a conical polypus, it ſeems to me, that the neck or pedicle is formed by time, and the pendulous poſture of the tumor: But a concluſion far more important, not certain indeed but probable, and not unworthy of conſideration, follows, viz. that ſince the diſeaſe often is formed inſtantly, and ſenſibly, after a violent and ſudden rheum or cold, and as it conſiſts at firſt in a mere relaxation of the membrane, there is a ſtage in which it is perhaps curable by aſtringent ſolution, and the uſe of cauſtic.

I have, Gentlemen, in the opening of this diſcourſe, repreſented the progreſs of this diſeaſe through its various ſtages; you muſt have obſerved, that polypus is, in the ſeveral periods of its progreſs ſo unlike itſelf, that though invariably mild, and void of pain, in its early period, it ends as invariably in caries of the bones, and death from hemorrhages, and hectic, and preſſure upon the brain. You muſt of courſe conclude, that thoſe who maintain the oppoſite doctrines of malignity and benignity, much reſemble the knights coming from oppoſite roads, from the eaſt and from the weſt, and arriving at the ſtatue erected at the meeting of the oppoſite roads, pronounced, the one, that the ſtatue was of ſilver, the other, that it was of gold, and maintaining their opinions with fury, gave battle to one another on the ſpot, while the traveller who advanced by the middle road, found that both were right.

From the conceptions which now open upon you of the nature of this diſeaſe, you muſt naturally ſuppoſe, that in place of arranging polypi according to the imaginary characters of ſoft, and hard, mild, and malignant, I ſhould rather define the ſeveral ſtages and periods of its growth, and deſcribe the operations correſponding with each ſtage. It is not by books nor converſation, that you will ever be able to decide which mode of extirpating a polypus is to be preferred: you will learn only, that ſome have uſed ligature, ſome cauſtic, ſome forceps, ſome the cautery, ſome heated irons, ſome long needles, with which they have bored and transfixed the polypus! That old ſurgeons have been in the practice of cleaving the palate moſt unrelentingly, to get at thoſe polypi which hang in the throat; while others have moſt audaciouſly propoſed, to cut open the noſtrils and cheek-bones! Each praiſes his own method as invariably ſucceſsful; and the imagination of the young ſurgeon being left, diſtracted among ſuch a chaos of inventions, though he is at a loſs to chooſe, never doubts, that with ſuch a variety of means before him, and the privilege of trying one after another, he cannot entirely fail. Many an operation, good and bad, ſucceſsful and unſucceſsful, have I witneſſed; and certain practical concluſions, which I neither ſought nor imagined, have come to be eſtabliſhed in my mind; but eſpecially theſe: That the ſurgeon who attempts to nooſe a polypus of the noſtril, invariably miſcarries; yet this is the kind of polypus, which being eaſily ſeen and felt, is ſuppoſed to be moſt eaſily nooſed. That the big and bulbous polypus, which deſcends by the back of the noſtrils towards the throat, and depreſſes the ſoft palate, though uſually ſhunned as too bulky to be grappled with, is truly the moſt favourable for this operation; this is indeed the only period of its growth, in which the polypus can be effectually nooſed. That the polypus which has its root within the antrum maxillare, is characteriſed by early and permanent pain, the caries of the jaw-bone, and the dropping out of the teeth, and that it is not to be reached with the ſilver tubes of Levret, nor to be nooſed, nor extracted by ordinary methods, is too obvious to require illuſtration: is is equally obvious, that the polypus which has already burſt up the cells, and produced a general caries among the ſpongy bones, is paſt all ſurgery: That the extraction of the polypus in ſuch diſaſtrous circumſtances, only hurries on the cataſtrophe, as I ſhall prove by ſad memorials. After being long perplexed, as every one muſt be who takes his firſt ideas from books, concerning the preferable modes of practice, I learnt from experience, what I regard as a diſcovery more precious and uſeful than that of the moſt curious inſtruments,

viz. that each ſtage of the diſeaſe requires an appropriate operation; ſo that each method, in its turn, becomes valuable; and that with judicious diſtinctions, and moderate ſkill, every polypus has its appropiate mode of cure, except in its laſt and fatal ſtage.

I am now to define the ſeveral ſtages in the growth of polypus, which require appropriate operations; but do not flatter yourſelves, that, becauſe all ſeems clear and ſimple in deſcription, every thing will be ſo in practice: I am, indeed, an enthuſiaſt, but not in this degree; for though I hope and mean to make the ſubject very ſimple, yet you are in your turn to have your diſappointments and uncertainties. You are neither to judge by your eye, feel with your fingers, nor act with your inſtruments ſo perfectly, nor ſo dextrouſly as you might expect.

1. In its early ſtage polypus has invariably that character which is uſually denominated mild: it is ſmall, moveable, pale, colourleſs, and has not as yet begun to affect the adjacent parts by the preſſure; there is a watering of the eyes, ſneezing, altered voice, and interrupted breathing, but as yet no pain, nor any fœtid ichor diſtilling from the noſe: from the ſmallneſs and pendulous direction of ſuch polypus, to nooſe it is difficult; and from the numbers of ſmaller polypi which uſually lurk one behind another, the perfect extirpation of all of them by applying the nooſe is nearly impoſſible. The happieſt and moſt ſucceſsful proceſs is to extract the body or bulky part of ſuch polypi with forceps, and to deſtroy their roots with cauſtic.

2. In its next ſtage, the polypus grows to a great bulk, not only fills the noſtril, but is viſible in the throat, the voice is entirely changed, for not a breath of air reaches the bony cells, nor paſſes through the noſtrils: the hearing is greatly affected; if you introduce your fingers deep into the throat, you feel a tumor ſo bulky, as at once to depreſs the ſoft palate, and compreſs entirely the mouth of one or both Euſtachian tubes: the face is ſwelled and unſightly, the noſe inclined to one ſide, blood begins occaſionally to flow, and the matter diſtilling from the noſtrils and throat begins to be fœtid; the preſſure is now univerſal and begins to affect the bones, and the diſeaſe borders on that ſtage which is, I fear, incurable.

This bulky and ſeemingly dangerous polypus, terrifies the young ſurgeon; he reads in elementary books only of trivial tumors appearing in the noſtril, and is alarmed when he ſees a polypus of this enormous ſize: he has read in books of caſes, of polypi thus oppreſſing the patient and deſcending into the throat, but he recollects, that the ſurgeon in theſe deſperate circumſtances committed every kind of

devaſtation, they often cleft the palate to reach the tumor, and were willing even to perforate the trachea: yet this caſe, or this ſtage rather of the diſeaſe is not deſperate; it is indeed on the verge of that period in which the polypus is incurable, but from its very bulk it is eaſy and effectually nooſed. I find not the ſlighteſt difficulty in this caſe; paſſing a ſilver wire through the noſtril, bringing it out through the mouth, and with the points of the fingers (thruſt deep into the throat,) raiſing it over the bulbous and moſt dependent part of the tumor, I draw it back into the noſtril, and, as it appears to me quite to the neck of the tumor, for I have often ſucceeded thus, and never found reaſon to ſeek the roots of the polypus, or apply cauſtic.

3. In its third and laſt ſtage, when the paſſages of the noſtrils and throat have been long obſtructed, and the face much deformed; when the patient has long endured the rending head-aches, and pains proceeding from the diſtenſion; when the ſurgeon can diſtinguiſh, by preſſing with his fingers, that the cheek-bones are ſoftened, and the naſal bones become moveable, and fœtor and hemorrhages intimate the caries within; when the integuments of the face are puffy, the ſkin reddened, or livid, over the root of the noſe, and the teeth looſened; when the ſtupor from preſſure on the brain, and the chilline ſs from want of nouriſhment and loſs of blood are great and continual, the diſeaſe is declining into its laſt ſtage, which we can hardly palliate, and cannot cure. This is the ſtage of the diſeaſe reputed cancerous, and operations undertaken in theſe circumſtances, and performed, as I have ſeen them with rudeneſs, inflame the brain, ſo that the patient preſently ſinks into abſolute ſtupor, and dies.

For every practical purpoſe, the definition of theſe three ſtages is, as I judge, altogether ſufficient.

DISCOURSE V.

OF THE VARIOUS OPERATIONS PRACTICABLE IN THESE SEVERAL STAGES OF POLYPUS.

OF THE FIRST STAGE; OR, OF SMALL AND INCIPIENT POLYPI.

THE firſt ſtage of polypus I no longer characterize by ſymptoms, the enumeration of theſe, I hope, I am entitled to omit in future. I am now to ſpeak of the extirpation, of the means of eradicating, not apparently but effectually, that ſmaller polypus, which hangs forwards in the noſe, and only obſtructs the noſtrils. Of the operation of ligatures I have ſpoken with little reſtraint, I know too well what is uſually done, what can can be done by Levret's tubes, to mention that method with reſpect. On this ſubject I will uſe but one plain blunt expreſſion, and take notice that I ſay no worſe of the attempts of others than I do of my own, (for I have many times attempted this method,) " That the diſappointment of thoſe who confidently expect and promiſe to nooſe ſuch ſmall tumors, is ſo frequent and ſo ludicrous, that I ſhould be loath to quote examples: many are the times I have ſeen the ſurgeon thruſt his tubes and wires into the noſtrils and withdraw them again, leaving the noſe ſtreaming with blood: the attempt is on ſuch occaſions, repeated without delicacy or mercy, and if he but ſo fix his tube that it can hang without dropping away by its own weight, he willingly leaves it there, and truſts his reputation to this firſt appearance of ſucceſs. But it drops away on the ſecond day, the breathing, the voice, the hearing, are ſtill affected as they were before; even were there but one polypus, (and you know by theſe drawings, and I aſſure you from experience, that there are uſually many,) a ſecond would immediately deſcend, and occupy the place of the firſt. But where a ligature is thus ſlightly applied, the point only, the mere bulb of the polypus alone, is cut off; the noſtril is ſo far cloſed, that the breathing is for a moment freer, but the long neck and root, from which the diſeaſe germinates again, remain untouched, and the individual tumor, which is the ſubject of the operation, ſprouts again with renovated vigour in a few days. This then is a harmleſs, but it is as certainly a ſilly operation; I knew not how very trifling it was, till I had often failed: be aſſured that, however much you may be captivated with theſe ingenious tubes of Levret, for ap-

plying ligatures, and though you may be ſtill more captivated with your own inventions, (for every one invents inſtruments for extracting polypi,) be aſſured that a grievous diſappointment awaits you, which I now warn you of. As Richter obſerves, there are but two methods of extirpating polypus, viz. by ligature, or by forceps, and ever ſince the time of Levret, who, from a horror at hemorrhagy, and the fear of tearing away the ſpongy bones, invented inſtruments for paſſing the ligature, ſurgeons have uniformly preferred the ligature to forceps *.

I will not allow myſelf to protract my diſcourſe by any but occaſional hints of the irregular and inefficient practices of the early ſurgeons, nor defer what muſt be intereſting to you, the ſimple account of what experience has taught me: I was early aware of the little advantage to be derived from the ligature in ſmaller polypi, and learnt to uſe the forceps, the knife, and the cauſtic with particular freedom. I fear I tell you no more than the truth, when I ſay that, in my mind, every operation for polypus, muſt be one way or other, rude and cruel, to be at all ſucceſsful; and that theſe nice and curious methods muſt be unavailing.

The forceps, knife, and cauſtic are the means I have found moſt ſuitable to the ſmaller polypi; and, according to the conceptions I form of each particular tumor, according to the period of its growth, the ſymptoms and effects of its preſſure, and, by ſearching with the probe, or fingers, I uſe thoſe inſtruments variouſly, and purſue them according to the progreſs and effect of the operations. I begin with the forceps, and conclude with the cauſtic, and I find the extirpation of a polypus, and the killing of its roots, not an operation to be performed with ſuch a ſhow of dexterity as to captivate the pupils who aſſiſt or are preſent; I find it to be a work at once ſlow and difficult, and often, I fear, it is imperfectly accompliſhed.

It is aſſuredly neither the root, nor even the body of a polypus, that you are able to ſeize with the forceps; but the bulbous point only; for you will obſerve in all theſe drawings, that the neck of the polypus, and all that hangs in the paſſage, is ſlender and delicate, that it forms a bulb, only where it hangs below the narrowed ſlit of the internal noſtril, or behind the palate; that it is of this bulb only,

* Duplici polypos narium chirurgia tollit methodo, vel ligatura illos ſeparat, vel forcipe evellit. Poſtquam Cel. Gallorum chirurgus Levret tam egregia ad applicandum ligaturam invenit inſtrumenta, methodum illum applicandi regulaſque in hoc curationis genere obſervandas tam egregie expoſuit; unuſquiſque chirurgorum priorem methodum, quæ ligatura tollit polypum, tanquam mitiorem tutioremque, longe præferendam eſſe arbitratus eſt poſteriori, quæ ope forcipis evellit polypum et vi, qua agit, et inſigni hæmorrhagia, quam plerumque excitat, terrorem incutit.

that I can catch a ſlippery and inſecure hold, ſo that you may ſometimes, in conſequence of the ſlenderneſs of the neck, and, by a ſort of accident, twitch it off from its narroweſt part, and cloſe to the ſpongy bone. The pedicle ſometimes gives way ſpontaneouſly, the tumor dropping into the fauces: and it will often, by a happy chance, break off from the root in extracting *. In ſuch operation no man need affect unuſual addreſs: if the bulb retires before the inſtruments when puſhed into the noſtril, he has then a better chance of catching the neck: the bleeding ſo much dreaded, and made an argument, almoſt the ſole one, by Levret, for adopting his method by ligature, is indeed extremely ſlight: from much experience I can aſſure you, that ſuch hemorrhagy will never weaken the patient, nor require a plug, which yet ſhould always be in readineſs; but it is not ſo in extirpating the roots of the tumor with the knife, then the hemorrhage is great. Both noſtrils are uſually diſeaſed, and, on the firſt day, I extract whatever polypi preſent in either noſtril; but, far from imagining that I have done all my duty to the patient, I proceed at next viſit, and indeed at every following viſit, to ſearch for polypi, or their remains. Some polypi, I find, come out entire, as I judge by their form; others, manifeſtly ſhort of their full dimenſions, and mangled †. The anterior noſtril being cleared, I ſee down into the naſal ſlit, (fente naſal, as the French term it,) and feel deeper with my finger: often, upon looking into the noſtril, I ſee, even at a late ſtage of my operations, the remains of a polypus, or feel it with the extremity of the finger, and ſtill more frequently I am ſenſible of eradicating, by various methods, polypi which are too deep to be viſible; for behind the narrow ſlit which the finger cannot paſs, the noſtril is enlarged, and in that wider part, uſually the vomer is preſſed to one ſide, there is left a hollow in which the polypi hang. It is only by continual examination, and the moſt earneſt attention, and a careful calculation of points and diſtances, that ſuch remains of polypi are diſcovered: firſt, by a rattling noiſe, when the breath is driven through the noſtril, which, though tolerably free, is ſo only at times, and in particular poſtures: ſecondly, by feeling with the probe, or with a bigger inſtrument, when we

* The forceps, as they are now formed, ſeldom catch a ſecure hold. Thoſe, No. 5. commonly uſed and beſt known by the name of Polypus Forceps, are entirely uſeleſs; are bigger than the finger, and give no hold. Their blades are too broad. Thoſe ſketched No. 6. I prefer and uſe, they are ſmall, long, delicate, and their ſtrength is put upon the thickneſs, not upon the breadth of the blade; they enter eaſily and catch well.

† No. 7, a polypus of full ſize, root and all. No. 8, 9, 10, 11, polypi ſhort of their natural dimenſions, or extracted in fragments.

perceive that the back paſſage is not clear, the point of the inſtrument, (I often uſe the Sound,) encountering a reſiſtance when it ſhould deſcend to the back of the noſtril, ſo as to touch the velum; the reſiſtance we are ſenſible is not ſolid, ſuch as would proceed from the probe encountering one of the ſpongy bones, but ſoft and yielding, ſuch as we are ſenſible we could overcome by daſhing the inſtrument down into the throat: thirdly, when the patient, in conſequence of our firſt operations, inhales his breath freely, but cannot breathe out with equal freedom, we are ſure that a polypus, or the remains of one, are ſtill hanging in the back part of the noſtrils, nearer the palate; acting like a valve, it recedes when the patient draws in his breath, but, when he breathes out, it falls flat upon the back of the noſtril and prevents the exit of the air. Now, although I am pleaſed when I ſee the ſtupor leſſen, the breathing freer, and the hearing reſtored, I am conſcious that all is not ſafe, and that there muſt be added other eſſential ſigns of the paſſage being free. It is in this ſtage that the patient is uſually diſmiſſed, and moſt inhumanly, with ſome trivial directions of introducing bougies, or drawing aſtringent ſolutions up the noſtril, to return in a few months with an incurable and carious diſeaſe of all the bones. When I find that, though the patient breathes eaſily, the head reclining backwards, he cannot breathe in the natural and perpendicular poſture; when I find that though he inhales the breath eaſily, he finds it ſuddenly and vehemently ſtopped, however ſtrongly and perſeveringly he preſſes it; when I find, (ſuſpecting from thoſe ſigns ſomething wrong,) that though the anterior noſtril is free, ſome coloured body appears within the naſal ſlit, is felt with the finger, though indiſtinctly, and is directly encountered by the Sound, or big probe, paſſed from the noſtril towards the throat; when I find that his breathing (even after having become free,) after he is able to daſh out by vehement efforts, the prodigious quantity of thickened mucus, which the inflamed ſtate of the noſtril generates, is yet accompanied with a rattling and ſnorting noiſe; when that peculiar noiſe continues after the noſtril is cleanſed by ſnorting, and by wiping it within with the probe covered with lint, I am ſure there is ſome dangerous remains of the diſeaſe. Often I ſee this, after I have begun to apply the cauſtic, and diſcover the remains of the polypus, rounded by ulceration, of a brilliant colour and bud-like; but never, after this ſtage, do I expect good from the forceps: I proceed to rougher and more deciſive methods.

When I find the whole of the poſterior noſtril cloſed by a ſpongy polypus, which I either have not reached, or have extirpated imperfectly, I have recourſe to the knife: when I firſt ordered knives to be forged for me of the form repreſented in

No. 15. I little imagined I had the leaſt authority for proceeding in this enterpriſing way; yet I find that, far from having neglected thoſe paſſages of antient authors, where the uſe of the knife, and the ſpathula, which was a ſort of knife, was mentioned by Celſus, and by the Arabians, I had made accurate notes of their methods, which I had yet ſo entirely forgotten, as to proceed in cutting out polypi, with all the timidity of one who was attempting a thing, at once unprecedented and dangerous. I recollected no precedents, and reaſoned only on the neceſſity, on the ſimplicity of the operation, and by analogy inferred, that if we might extirpate a tumor of the cheek, or lip, of the palate, or tonſil, with the knife, much more ſhould we adventure to extirpate that of the noſtril, ſince, by drawing up plugs into the noſtril from behind, we could entirely ſuppreſs whatever hemorrhagy any operation produced; we could apprehend nothing from the wounding of the ſpongy bones, and the operation of inciſion, in place of the rude method of tearing and mangling with forceps, ſeemed more delicate in relation to the membrane, and more effectual in reſpect to the tumor. I have never ſince that period, (now many years paſt,) ſpared the knife in operations of this nature: often I have uſed it in the firſt operations, and in place of pulling away the more bulky polypi with the forceps, have ſlipped in the knife into the noſtril, and carrying it flat and vertical, till I reached, according to my apprehenſion, the root of the tumor, have then turned the edge towards it, and with ſome mangling, and not without both difficulty and fear, have cut it off. But when the noſtril is already in ſome degree clear, when the anterior noſtril is free in ſo far as to admit the knives eaſily, but the poſterior noſtril ſtill encumbered with tumors, or the remains of tumors, I find it particularly advantageous, to paſs the knife deep through the noſtril, till it lies in the poſterior opening of the noſtril over the palate; then turning the knife, and ſtriking a ſtroke alternately to right and left, or cutting with premeditation in that direction, in which from the probe, or the circumſtances of the breathing, I ſuſpect the tumor to hang, I free the noſtril of this laſt obſtruction. I do not know a greater happineſs for the patient, or a greater victory on the part of the ſurgeon, than that of clearing the noſtrils of this very dangerous diſeaſe: in which-ſoever relation I ſtood, of patient or of ſurgeon, I would ſet no limits to the ſacrifices I would make for ſuch a purpoſe: I have ever remarked, that the period of ſuffering on the part of the patient, or of neceſſary cruelty on the part of the ſurgeon, though ſeemingly long, is really tranſient, and, when the end is accompliſhed, on the return of health and pleaſure, when freedom of breathing, and of hearing is reſtored, is entirely forgotten. Therefore, I









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intreat you in all ſuch caſes to perſevere: there is but one immediate danger, viz. that of hemorrhagy; and I leave you to judge, whether any inciſion theſe knives can make, although it were directly into the membrane and among the ſpongy bones, much leſs ſuch as is made into the ſlender neck or body of a tumor ſo ſmall as to be contained within the noſtril, could be dangerous! Confident that it could not, I have always uſed the knife freely, and, though I have had the plugs for ſuppreſſing hemorrhagy ready, and have uſually indeed had the ligature ready paſſed from the noſtril to the throat, prepared to draw up the plug, I have not more than twice or three times at the utmoſt had occaſion to draw it, and then only to ſave the ſtrength, and leſſen the alarm of the patient, not to ſave his life.

Let me now repreſent to you, after theſe general deſcriptions, the particular acts of theſe ſucceſſive operations.

1ſt, For the extraction, you muſt be conſcious, that with the beſt imagined forceps, you can graſp only the bulb or moſt pendulous point of the polypus; that if you are ſucceſsful in twitching out the polypus by its root, it muſt be by your good fortune in having to deal with a polypus whoſe root is naturally delicate; that your forceps are to be uſed with any degree of ſucceſs, they muſt be ſo formed as to operate with their blades vertical, viz. one towards the forehead, the other towards the chin of the patient; or, in other words, according to the length of the naſal ſlit. Vide Sketch of Inſtruments, No. 6, not with their blades laid laterally as in the Sketch, No. 5.

2d, That in uſing the knife, whether to amputate entire polypi, or to eradicate thoſe which have been partly extracted, you will do better to uſe a knife of the form repreſented, No. 11. viz. with the cutting edge on the convex, or what is uſually the back of the knife. Thoſe faſhioned like No. 12, 13, which I have hitherto uſed, will be found occaſionally very convenient, eſpecially in cutting at the roots of polypi lying far back in the noſtril or in the arches of the palate, and where you are to make your cut by hooking the crooked knife beyond the root of the tumor, and drawing it towards you. But I am conſcious that I could manage the form, No. 14, with perfect ſafety, and it is manifeſt that I could cut more decidely with it; for the polypi hang down from the upper ſpongy bones, in the form I have repreſented in all the drawings, and eſpecially in the drawings, No. 1 and 4, but which I have more correctly repreſented in the plan No. 15, which I drew in the time of operating, and for the correctneſs of which I can be reſponſible. After long reflection and many partial operations on this patient, I ſketched this

plan the moment after my finger and instruments were out of the nostrils. As soon as the gentleman, being freed from pain, could sit composedly and without suffering, he seated himself before me, while I made the plan, with every recollection and feeling fresh and lively. In this plan are represented the features in profile; the cavity or hollow formed by the bending aside of the vomer or partition of the nose; the roots of one polypus already extirpated, the remaining root being still sufficiently long to appear moveable upon looking into the nostril, and exposed, of course, to the stroke of the knife, and requiring it; another polypus entire, and deeper seated, obstructed the back of the nostril, allowing the patient to draw in his breath, but falling down valve-like, so as to prevent the breath being driven out: (a) a semicircular dotted line marks the place where the cartilaginous wing of the nose terminates, and the opening of the nostril is narrowed by the arch of the nasal bone: (b b.) the hollow produced by the receding of the vomer towards the left, being pressed by the bulk of the polypus: (c) marks the upper spongy bones, where the polypi had their roots: (d) the remains of a large polypus, which had originally filled the whole opening of the nostril, and of which only the root (d) is left, but was left of such a length as to require a stroke of the knife: (e) the direction of the lower spongy bone represented in a dotted line. This lower spongy bone, hanging on the edge of the antrum under the cheek-bones, and the antrum being cut away, it can be represented only by this imaginary line. (f) Marks a longer and more entire polypus, which so obstructed the back opening of the nostril, (viz. that towards the throat), that neither the big-headed probe, nor even the common probe or director could pass freely: (g) demonstrates the direction of the knife, when passed down the nostril, towards the throat, so as to cut the polypus, in withdrawing it, by very slightly turning its edge. But it is obvious, that had I used knives cutting on the back, though I could not have been sure to conduct them so harmlessly through the nostril, I should have been sure of using them more effectually; for a knife so formed, scythe-like, and cutting on its convex edge, could not have failed to cut off, and that probably very near its root, whatever polypus hung down from the upper spongy bone.

3d. For the suppressing of the hemorhagy, it is necessary that you be made acquainted with the introduction of the noose, which is a method at once simple and effectual, of drawing up a plug from behind the palate to the posterior opening of the nostril, so as to have it in your power to close at once both openings, to restrain the blood. You are to take, not a piece of catgut, for that is liable to

twiſt very provokingly, and to be ſo ſoftened with the moiſture of the fauces as to loſe its ſhape; but a piece of delicate ſilver wire, or, occaſionally, I have uſed a harpſichord wire, and doubling it, you make the patient gape, introduce the loop of the wire through the noſtril, and watch its appearance in the throat; the ſplendor of the ſilver wire ſhows it at once; if you find the patient not at all excited to cough, you may be aſſured the wire has not yet reached the fauces; if he is in danger of ſuffocating, you may be aſſured that the loop of the wire actually touches the epiglottis; then you will retract it a little, and the irritation will ceaſe. The way to ſucceed is to carry all quietly and ſoftly, to inſinuate the wire along the noſtril very gently, to watch for it in the throat carefully, to mark its appearance inſtantly, when it begins to paſs behind the velum, to puſh it no farther, for then it touches the irritable parts, to be ready with the crooked probe, or the dreſſing forceps, or a blunt hook, to catch it the inſtant it appears, and draw it out by the mouth. Then, in the loop of the wire, you fix, with a piece of thread, a ſmall pad of charpie, ſuch as is repreſented, figure 16 of the inſtruments, and make ready to draw it back through the mouth, and up behind the ſoft palate, into the back of the noſtrils. You prepare for this act by twining the wire round the fingers of your left hand, near the noſtril, and by holding the plug upon the point of the fingers of your right hand; you then draw back the wire through the noſtrils, and puſh the plug into the mouth by correſponding motions of your two hands, and when you have got the plug to the back of the palate, and juſt ſticking in the fauces, you muſt not leave it a moment there, but by a ſudden jirk with the left hand, puſhing boldly at the ſame moment with the fingers of the right, you bolt it up into the poſterior opening of the noſtrils, above the back of the palate, and fix it at once in the cleft at the back of the noſtrils. This being finiſhed by plugging, at the ſame time, the opening of the correſponding noſtril, there is no longer a poſſibility of the blood eſcaping. I have ſeveral times needed to uſe this method in caſes of epiſtaxis, and three or four times after extirpating polypus, but eſpecially after uſing the knife.

4th. When all is done that knife or forceps can do, I proceed to uſe the cauſtic, and with this conviction, that I ſhould be very indifferent indeed, whether I deſtroy the polypus only, or the ſpongy bone, or much of the membrane, if but the polypus be deſtroyed. However confident I am of having extirpated the tumors by my preliminary operations, I never think it ſuperfluous to burn the roots, but apply the cauſtic the more boldly, when by the frequency of my ope-

rations, I am ſure of being able to mark the points of the noſtril at which I have to expect the roots of the polypi. To apply the cauſtic effectually, you muſt apply it boldly; and if you conſider the important object to be attained, you will be careleſs although it ſhould affect the ſpongy bones; or rather you will be fearleſs of every thing, but the error of not applying it effectually. I find much addreſs neceſſary in this, which I confeſs I have learnt ſlowly.

I alter my method occaſionally, in the courſe of a cure, and according to the circumſtances of each caſe. Firſt I am careful to have the noſtril entirely cleared of mucus, which, in the inflamed ſtate of the fauces, and eſpecially after the operation of the cauſtic is begun, is ſecreted in ſuch profuſion as almoſt to ſuffocate the patient: He draws much back into the throat, he drives much outward by blowing the noſe, and I clear out the noſtril effectually with the probe rolled in lint, and then the noſtril, raw and red with the violence it has ſuſtained, is ſo clearly ſeen that I have often perceived, upon looking into it, a bud or germ of the polypus ſtill remaining, though very deep in the noſtril, and very ſmall. But independent of this proceſs of clearing and inſpecting the noſtril, we are able, merely from calculating the depth and diſtance of the upper ſpongy bones, and recollecting the circumſtances of the operation, to apply the cauſtic to the roots of the tumor with much confidence; no diſmal conſequences have I ever witneſſed, nor even the ſlighteſt incoveniencies from its being miſapplied.

I never have uſed a pencil of cauſtic * in a port-crayon; that, I know, would be, extremely dangerous, but ſpread the cauſtic upon lint; (I at firſt ſpread it upon leather), as I would for making a common cauſtic iſſue. Firſt I fold a piece of lint twice or thrice, and give it a triangular form, (fig. 17 aa), and after pounding the cauſtic, I mix it with water into a paſte, and ſpread it in the form and dimenſions (a) upon the lint, and then bend the lint over the point of a probe, or of a directory rather, the big obtuſe point of which carries it, and depoſits upon the preciſe point you wiſh, fairly and without getting entangled in it. In paſſing ſo big a cauſtic along the noſtril, the parts would be cruelly excoriated, were we not

* I find, in looking over my notes of caſes, that this is not quite correct; that when I firſt began to uſe the cauſtic, I uſed it by ſoaking a large piece of camel's hair pencil in it, conveying the bruſh along a canula made of a playing-card; but finding ſuch application quite ineffectual, and having alſo thought of uſing a port-crayon, perhaps I may have tried it, but I even, in this firſt caſe, renewed the uſe of it, and betook myſelf to the ſcraped cauſtic, which being laid thick, is equivalent to a ſolid cauſtic, and yet abſolutely ſafe.

careful to guard the canal, which I do, by cutting a ſtripe of ſheep's leather, in the form and ſize marked No. 18, and conveying it high into the noſtril with the probe, and laying it flat and ſmooth along the ſurface to be cauteriſed. I leave it there, and turning the cauſtic towards it, I run it up to the point I deſign to burn. Upon the ſlighteſt ſenſe of diſappointment I withdraw both, and begin anew; but being conſcious that I have ſucceeded, I withdraw the ſheath of leather at the ſame moment that I puſh up the cauſtic to the part, and I impreſs the cauſtic very firmly upon the part; for, the inſtant it touches the naked ſurface, the eyes fill with tears, the patient draws a long breath, and ſneezes tremendouſly, and inſtantly diſplaces it: but if you preſs firm, this firſt irritation goes off; if you have paſſed it far beyond the ſtrait of the noſtril, and up to that point where always I conceive the roots of the tumour to lie, it ſeldom is driven away by any future paroxyſm of ſneezing. It does ſometimes happen, that the profuſe ſecretion of mucus carries it down, and the operation being performed at ten o'clock, for example, the cauſtic is diſcharged by two or three o'clock; but often I have found the cauſtic in both noſtrils next day at dreſſing. It will add to your aſſurance and confidence when I tell you, that deep as you may appear to yourſelf to have introduced the cauſtic rather beyond the noſtril as you would imagine, and on the very verge of its poſterior opening, juſt over the palate, it never falls backwards into the throat, nor ever is ſwallowed; of the many hundred times I have uſed the cauſtic, no ſuch thing ever happened *.

There is one thing perhaps contributes to its coming always forward, viz. that the moment the cauſtic is placed, and the ſneezing is over, I inſtantly cram the noſtril full of little doſſils of lint, which are lying ready prepared, and are quickly handed to me; if this be not done firſt, the noſtril and upper lip are ſeverely excoriated and deeply corroded with the cauſtic; ſecondly, the cauſtic piece of charpie, if not ſupported by others from behind, is apt to be diſplaced; the noſtril being enlarged by the polypus, requires a great deal of lint to fill it; and to prevent any drop of melted cauſtic or mucus deſcending this way, I ram the lint hard into the noſtril at each dreſſing. I find the lower doſſils of lint diſcharged, (thoſe I

* It was long before I was entirely void of anxiety on this ſubject; I find in my notes, a caſe of a young lady of 19 years of age, who is now in perfect health, that in place of uſing ſimply this pledget of charpie, coated with cauſtic, I mounted the lint upon a cone of ſtiff paper, or card, the conical form of it, the apex looking forwards would, I expected, prevent the cauſtic from paſſing backwards into the fauces. I did not then know how ſuperfluous ſuch precaution was.

mean, which fill the cartilaginous mouth of the noſtril), the cauſtic ones often are returned, (they occupying the deeper, ſtraiter, and bony part of the noſtril, beyond the narrow ſlit formed by the naſal and ſpongy bones.) The doſſils and mucus are hooked out, the mucus picked away, and ſometimes the noſtril waſhed with barley-water or oxymel at each dreſſing. The cauſtic I apply every ſecond or third day; I often continue this ſevere proceſs, during a whole month, with occaſional intermiſſions; and I confeſs the whole cure to be ſo difficult, that whether from the preſenting of polypi already exiſting, or from the quick regeneration of thoſe already extirpated, I have had occaſion, even while uſing the cauſtic, to repeat my inciſion with the knife; and while I am making inciſions upon the remains of the polypi, or conſuming their roots with cauſtic, I find it advantageous to clear the noſtril, eſpecially in its back parts, by methods almoſt approaching to rudeneſs, by wrapping the big iron probe, of a curved form, No. 19. round with lint, or mounting it with a ſponge, and running it thus guarded down the noſtril:—I make it ſo large as not only to fill the noſtril, but to paſs through it with great difficulty, and by forcing it through the ſlit of the noſtrils, quite back to the palate, I often force off theſe remains of polypi, which are already half conſumed, or imperfectly cut *. Theſe, Gentlemen, are the methods which, uſed with perſeverance and courage, have ſeldom failed me: of many patients whom I have treated, there are very few, I declare ſolemnly, who have returned to put themſelves under my care: of the entire recovery of ſuch as I have not ſeen again, it would be preſumption to ſpeak confidently, but from many I have had the happieſt aſſurances of their continuing in perfect health. Such is my proceſs with the ſofter, ſmaller, and incipient polypi, which occupy only the noſtrils, and are pronounced mild and benign †: the hard

* I ſee occaſionally the half conſumed polypus, or rather the root of it, of a very florid red colour, and touching it with the probe, I feel it hard and granulated: ſometimes the opening of the noſtril is ſo exulcerated as to require intermiſſion of the proceſs, and the anointing of the excoriated parts with oil or ointments.

† I ſhould be ſorry to omit mentioning an operation, which has been approved and commended by the greateſt practitioners, and has held its place from the earlieſt times; it was invented, I believe, by the Arabians; is deſcribed by Albucaſis, and was uſed ſucceſsfully by La Faye, in the Hotel Dieu. It is the paſſing a large ſeton or cord from the mouth through the noſtrils, knotted, at intervals of an inch or more; the knots are meant to preſs upon the roots of the polypus, and made larger and drawn up tighter, in proportion as the tumor yields, or the paſſage dilates. The mechaniſm of this invention is eaſily underſtood by thoſe general terms, and I am not entitled to be particular, as no occaſion has preſented itſelf, in which I thought of uſing this method; but it is ſurely worthy of being mentioned, and I can imagine a variety of circumſtances in which it may be uſeful.

and bulky polypi, paſſing down into the throat, require other operations; and to explain theſe, demands a more methodical enumeration of the various inventions, and, I may ſay, cruelties, of the older ſurgeons.

Second Stage of POLYPUS.

THE fears of the ſurgeon increaſe in proportion to the ſize of the polypus, and there is no taſk from which he revolts ſo much, as that of grappling with a polypus which already depreſſes the palate, and begins to fill the fauces and throat. Such a tumor left to itſelf is indeed full of danger; the noſtrils and throat are filled with its bulk, the bones ſorely compreſſed, as the pain and ſtupor ſufficiently evince; the voice affected; the hearing injured; the breathing and ſwallowing interrupted; the patient is thence in the utmoſt jeopardy, and that ſtage faſt approaching which is ſo incurable. But this bulk, which threatens deſtruction to the bones, facilitates all the ſurgeon's operations, and is a probable ſign of the tumor being ſingle.

Surgery was at one period rude and cruel in all its operations, but thoſe uſed for the extirpation of polypus, were ſo in a peculiar degree. The ancient ſurgeons, very unlike their ſucceſſors of the preſent day, in place of declining, (with whatever delicacy or cunning their nature inclined them to), thoſe operations which ſeemed unpromiſing, appear to have been inſpired, on ſuch occaſions, with a barbarous courage. The larger polypi, depreſſing the palate and extending towards the throat, ſeemed to them to vindicate every degree of violence. They attempted the extirpation, ſometimes by the moſt cruel cauteries, oftener by main force. They, if the polypus was long and pendulous, tugged at it with mercileſs rudeneſs; if beyond their graſp, they conſumed it with heated irons. This has been ſo little reformed by modern ſurgeons, that when they have not quite abandoned the patient, theſe are the very methods they have uſed. I know not by how many ways, all deſperate, all compenſating the want of ſkill by force and cruelty, ſurgeons have ſhewn their alarm, and terror, at this diſeaſe: by tearing with fingers and forceps, by cutting with knives and ſciſſars, by burning with heated irons, or deſtroying with cauſtic, by raſping the polypus with knives faſhioned like ſaws, by ſlitting the noſtrils, or dividing the palate, to get at its root. Yet, I am confident, that by explaining ſome of their cruelties, I ſhall teach you more, both concerning the varieties of the tumor, and its relation to the paſſages of the noſtrils and throat, than I ſhould by deſcribing the ſimpler methods which I prefer, and am accuſtomed to practiſe. The celebrated Richter narrates the caſe of a peaſant who had a big and hard

polypus filling the noſtril, apparently for no other purpoſe, than to explain his method of uſing the actual cautery, a method far exceeding, in cruelty, that of Celſus. Celſus, in the caſe either of ozæna, or of polypus, introducing a writing reed, and along that a ſlender heated iron, till it reaches the bone, burns the diſeaſe, purging and cleanſing the burnt part with honey and verdigris: or at once he ſlits the noſtril, from its opening up to the naſal-bones, for the ſurer application of the heated iron; and deliberately ſews up the noſtril, after this pleaſant operation, dreſſing the eſchar and the ſlit of the noſtril, each according to its nature *. The polypus in Richter's patient was perfectly round, exceedingly hard, and ſo entirely did it fill the noſtril, that he could find no means of paſſing the blades of his forceps to the ſides of it. Beſides the ſize and hardneſs of the tumor, every thing was unfavourable; the ſlighteſt touch of any inſtrument, the ſlighteſt concuſſion of the head by ſneezing, &c. was followed by profuſe hemorrhage. Theſe hemorrhages, and the irregular and ulcerated form of the tumor, were imputed by Richter to the raſh proceedings of a quack, who had tried to conſume the tumor by cauſtics. The man was enfeebled, pale, and bloated; his breathing was laborious, he could ſcarcely ſtand alone; he had ſuffered daily from loſs of blood, and in the laſt attempts to nooſe the polypus, his ſtrength fell ſo low, that this, together with the firmneſs and ſize of the tumor, (which abſolutely precluded the paſſing of even the moſt delicate inſtrument,) forbad every attempt by the uſual methods. Though the uſual way of applying the cautery, viz. by conſuming firſt the moſt pendulous part of the tumor, had failed, Richter conceived hopes of deſtroying the polypus, if the cautery could be ſo uſed as to conſume from the center. This unpromiſing theory he put in practice, in a very ineffectual and cruel manner: he paſſed an iron canula, of an inch and half in length, up the noſtril, wrapped round with wetted rags, to prevent the communication of the heat, preſſing its point againſt the center of the polypus, and paſſing along this tube, a trocar four inches long, ſuch as is

* Id autem vitium quod ὀζαινα a Græcis vocatur, ſi medicamentis non cederet, quemadmodum manu curandum eſſet, apud magnos chirurgicos non reperi. Credo, quia res raro ad ſanitatem ſatis proficit, cum aliquod in ipſa curatione tormentum habeat. Apud quoſdam tamen poſitum eſt, vel ſubtilem fiſtulam, vel eodem ſcriptorum calamum in narem eſſe conjiciendum, donec ſurſum ad os perveniat; tum per id tenue ferramentum candens, dandum eſſet ad ipſum os: deinde aduſtum locum purgandum eſſe ærugine et melle, ubi purus eſt, lycio ad ſanitatem perducendum. Vel narem incidendam eſſe ab ima parte ad os, ut et conſpici locus poſſit, et facilius candens ferramentum admoveri. Tum ſui narem debere, et aduſtum quidem ulcus eadem ratione curari, futuram vero illini vel ſpuma argenti, vel alio glutinante.

uſed in puncturing the hydrocele, heated red hot. Having plunged the heated trocar into the body of the polypus, to the extent of two inches, the boiling moiſture, notwithſtanding his precaution of the wet rags, diſtilled ſo profuſely along the noſtril that it burnt it *. Richter, after this mode of operation, ſeems to have abandoned his patient, with very little concern, to the care of others. The man ſuffered after this, intenſe head-aches, but he had no fever; great quantities of pus diſtilled from the noſtril, and the polypus ſhrunk in ſize, ſo that he could once more breathe, but what became of him after this, Richter knew not. He conſoles himſelf with this reflection, that the effects of the cautery, in this caſe, were by no means ſlight, and that its effect muſt always be the ſame. "The polypus (ſays Richter) was ſo far leſſened in ſize, that the remaining part could be more eaſily extracted or nooſed; nor do I deſpair of finding, ſometimes, the polypus entirely conſumed by the ſuppuration." Such is the method of deſtroying polypi by cauteries, little uſed by modern ſurgeons; but univerſally, in thoſe times when fire ſuperſeded bliſters, ſetons, iſſues, inciſions! and nothing but fire was uſed for head-aches, white ſwellings, hemorrhages, rheumatiſms, tumors! Whatever, in ſhort, was to be done, which could not be done by inciſion, was (to uſe the words

* Cum itaque nec ligari, nec evelli polypus poſſet de alio cogitandum erat remedio. Arriſit cauterium. Non ignorabam, parum a vulgari methodo cauterio utendi hic expectandum eſſe; cum parvam tantum partem polypi, illam ſcilicet, quæ anterius in nare eſt tangat, adeoque polypum plerumque irritet, ut eo ipſo tempore, quo eſchara prima cauterii applicatione inuſta, ſuppuratione ſeparatur, plus ſuccreſcat iterum, quam demtum ſit, eoque minus hic ſpes boni ſucceſſus fovenda erat, cum ipſis his cauſticis diu jam ante iterum iterumque æger uſus eſſet nihilque præſtiterat, quam ut parti polypi anteriori præmorſam hanc figuram rotundam, inſignemque duritiem reddiderit.

Inde ego ita quidem cauterium applicandum eſſe credidi, ut totum ſemel et ſimul afficeret, inflammaret, et in pus converteret polypum. Id quod ſequenti ratione peregi. Tubulum chalybeum, amplum, craſſum, pollicem unum et dimidium longum linteolis aqua frigida madidis obvolutum, ita in nares immiſi, ut inferius illius extremum mediæ polypi parti anteriori inſiſteret. Dein per hunc tubulum acum triquetram Troicart dictam, qualem ad perforandam tunicam teſticuli vaginalem hydrocele affectam adhibere ſolent, quatuor pollices longam, ignitam, in nares immiſi atque in ipſum polypum ad longitudinem duorum pollicum protruſi, et paullo poſt iterum extraxi. Quamvis narium ipſa interna ſuperficies linteis carptis aqua madidis circumdata eſſet, factum tamen eſt, ut ferventis humiditatis aliquid defluueret, doloremque crearet.

Conqueſtus eſt æger de inſigni capitis dolore, febriculaque affectus eſt. Cumque ob alia negotia ægrum jam relinquere oporteret chirurgum expertum juſſi iterato quotidie injicere in nares liquorem emollientem et quamdiu dolor et febricula adeſſet, lenia temperantia exhibere, victumque antifebrilem commendare.

of Hippocrates,) " to be done by fire." In theſe times when they were cruel in all their proceedings, it was natural to be peculiarly ſo in this diſeaſe; and they muſt, I have no doubt, have been ſucceſsful ſometimes, in proportion to their cruelty. This method, cruel as it is, hardly deſerves the coarſe ſarcaſm of Dionis, who ſays, contemptuouſly, " Par canule qu'ils poſoient ſur la tumeur, ils portoient un bouton de feu qui brulant cette chair en faiſſoit un *greſillement comme quand* on *rotit de boudin.**"

The full-grown polypus, filling at once the noſtrils and throat, is uſually ſingle, is of a very firm and cartilaginous conſiſtence; reſiſts the knife, and the forceps actually bend and break upon it: It is ſurpriſing how much a large polypus reſiſts the moſt violent pulling, ſuch as you would imagine, might pull away the ſpongy bones, or whatever other part the polypus was rooted in. I have allowed, " that every operation for unrooting a polypus muſt be cruel and unrelenting to be ſucceſsful!" and the operations which I am now going to deſcribe, differ, it muſt be confeſſed, very little from the method of extraction by forceps. When the polypus has attained to ſuch a ſize as to be catched by the fingers, it has been the cuſtom to extract it by whatever hold could be obtained, a practice which has prevailed till very lately. Mr. Morand is reported by de la Faye, to have unrooted two very large polypi in this manner: by paſſing one fore-finger into the noſtril, another into the mouth, behind the ſoft palate, he has got ſuch hold of the polypi, as to ſhake them from ſide to ſide, till he has ſo looſened them from their roots, that the patient ſpit them out piece-meal. This method ſeems ſucceſsful; one patient at leaſt, we are aſſured on the beſt authority, was entirely cured †.

This method of moving a polypus backwards and forwards by the fingers, or pulling and twiſting it by crow-bill forceps, or, when theſe methods failed, drawing it out to its utmoſt length and cutting it acroſs with ſciſſars or a crooked knife, was the operation aimed at by all the old ſurgeons, and which, one way or other they uſually accompliſhed. Now it appears to me, that I ſhould enter a little

* Albucaſis affected to cure the polypus by cauſtics, not even preſſed againſt the tumor, but applied to the forehead: He applied three, one in the centre of the forehead, and one above each eyebrow, which muſt have made it like the perforated end of a cocoa nut.

† Il y a quelque tems que M. Morand a emporté avec les deux doigts deux polypes fort gros. Il mit un doit dans la narine, & un autre dans la bouche par derriere la cloiſon, et en partant ces deux doigts de coté et d'autre, il detacha les polypes que les malades cracherent a differentes repriſes. Cette methode eut un bon ſucces: un de ces malades s'eſt trouvé gueri parfaitement.

into the detail of all this, for upon conſidering attentively the circumſtances of ſuch an operation, you will find, that they inſenſibly explain to you, the depths and diſtances, and relations of parts, both diſeaſed and natural, and you will perceive, from this kind of experience, what parts you can ſee, what reach with the knife or finger, what you can ſafely perform, and how far the hemorrhagy, the ſuffocation, or the ſickening of the patient may interrupt or prevent your operations.

The firſt operation I ſhall explain to you, is that rude one performed by Meekren, in which, after many violent ſtruggles, and actually breaking his crow-bill forceps upon the polypus, he was obliged, in the end, to cut it acroſs behind the velum.

" A lackey of Mr. Six, contracted, in conſequence of a blow on the noſe, ſuch difficulty of breathing, as created the moſt intolerable oppreſſion; and the complaint, in proceſs of time aroſe to that height, that he could not ſwallow without extreme pain.

" This lad had conſulted various ſurgeons and phyſicians. Some told him the diſeaſe was incurable, and refuſed to preſcribe; while others preſumed to ſay, becauſe he ſpoke imperfectly, that it was a venereal affection of the noſe. One remarked, that the diſeaſe muſt be referred ſolely to the noſe, becauſe the profuſe hemorrhages, and the acrid ſanies flowed only from the noſtrils; to which he applied various remedies without ſucceſs. His maſter, very much intereſted in the fate of this young man, neglected no occaſion of conſulting, while there ſeemed chance of a cure, and among others, he conſulted me, and my colleague Dr. Florian.

" Upon viſiting the patient, we found not only the noſtrils crammed with a firm polypus, but the fauces alſo ſtraightened with a fleſhy maſs, heavy, and of a cartilaginous hardneſs, extending behind the uvula, and oppreſſing the muſcles of pharynx. We agreed that there could be no cure but by extirpation, and adviſed eſpecially, that the firm maſs which hung downwards in the throat ſhould be torn away with forceps.

" The ſervant and maſter both conſenting moſt willingly to this operation, we prepared him with laxative potions, continued for a few days, and after theſe few days of preparation, the maſter and Florian were preſent at the operation, which I attempted in the following manner. I had neglected nothing that might be uſeful in ſuppreſſing the hemorrhagy, or in extracting the polypus.

" I had prepared a ſtyptic powder of galls, lapis hæmatitis, and Armenian bole, and to apply it effectually we had prepared proper tents and doſſils, and long thick pieces of ſoft ſponge, to which we had faſtened ſtrong ligatures, by which, in caſe of their falling backwards into the fauces they might be drawn upwards again; and theſe we dipt in white of eggs and lemon juice, that the ſtyptic powders might the better adhere to them.

" Then we began the operation, as had been concerted, placing the patient, who was full of courage, in a ſtrong light: then ſeizing the polypus, which was of the ſize of a hen's egg, (but ſomewhat flattened), in a pair of crooked forceps, I pulled and twiſted it in various directions, endeavouring, with much force, to tear it from its roots, but in vain: the polypus remained entire; the forceps, though particularly ſtrong, were broken; the patient, who had ſuffered with great conſtancy, felt as if all the bones of his head were torn aſunder with the violence; a profuſe hemorrhagy came on, which ceaſed however ſpontaneouſly: five or ſix times did we return to the charge, attempting, with great force, to tear away the polypus, but ſtill in vain.

" Thus diſappointed in all our attempts to extract the tumor, the force we had uſed, having only the effect of making it hang ſomewhat lower in the throat; we proceeded to cut it off with ſheers, as high as the uvula, which was in danger of being wounded, would allow.

" The polypus being thus amputated, no hemorrhagy enſued; for the blood, which flowed on our firſt attempts, was from the nutritious veſſels at the root of the tumor, whereas in the cartilaginous body of the tumor there were no ſuch veſſels.

" Proper linctuſes, and gargles, were prepared for the ſwelling, and pain of the uvula and fauces, which the patient did not ceaſe uſing night and day. For the continual watchfulneſs and pains of the head, we preſcribed emulſions; but with no effect, till opium and alexipharmics were added. He took freely of nutrient foods to reſtore his ſtrength: on the eighth day a profuſe hemorrhagy took place from the noſe and fauces; but from this time the patient daily gained ſtrength, ſo that in the ſpace of three weeks he was completely cured, and more robuſt and healthy than ever."

Meekren, and his helpers, had ſtruggled long and violently, often loſt their hold, broke the forceps, and endangered the palate! ſo much for the impetuoſity and force with which he had purſued his purpoſe, and for the ſtrength of ſuch a tumor,

and the violence which thoſe ſeemingly tender parts will bear; and though his expreſſions imply that this young man was radically cured, the thing ſeems phyſically impoſſible: he had not unrooted the tumor, nor even ſhaken it: it had reſiſted all his violence: he cut it acroſs behind the palate, and its root, and much of its body muſt have remained.

The operation I next relate to you, from Abby Ceers, was better conducted, and I doubt not, very ſucceſsful; the young man who was the ſubject of it having having ſurvived ten years in perfect health.

" A dignified clergyman of the duchy of Juliers, (ex agro Juliacenſi), laboured under the moſt enormous polypus I had ever ſeen, for it hung down from each noſtril, ſo that if he chanced to fall aſleep, or but to ſlumber, otherwiſe than with his mouth wide open, he was in danger of ſuffocation. A celebrated phyſician of our city having been conſulted immediately before me, declared that he would not touch the tumor, even with one finger, till the patient had paid him down three hundred crowns; but when I myſelf was aſked, I proteſted that I would not receive one ſous, till my patient had been at leaſt three years, not only free from the polypus, but from every ſymptom, and remnant of the diſeaſe. With the ſurgeon who was joined with me in this caſe, a bargain was ſtruck for twenty-five Spaniſh crowns. The pendulous parts of the polypus were pulled away, with a degree of hemorrhagy very unuſually profuſe, which, I confeſs, did alarm me, and which we ſtemmed with the juice of quinces and other herbs. Next I cleanſed the patient's body with purges and bleeding. Having, on the third day, reached the root of the æthmoid bone, and extracted many particles of it, we imagined our work nearly accompliſhed: but finding that the patient did not breathe with that perfect eaſe which we expected, we looked down into the fauces, and there ſaw, hanging behind the uvula, many ſuch pedicles reaching into the pharynx, as we had before ſeen protruding from the noſtrils. Theſe we pulled away by the help of the crow-bill forceps, a little crooked, placing a baſin below, that the blood might not run backwards into the trachea, but be ſpit out. When nothing more of this work remained to do, we introduced into each noſtril large leaden probes, (drawn by a goldſmith), and having brought them out through the mouth, twiſted and turned them in the noſtrils, till upon holding a lighted taper to each noſtril, we found the paſſage perfectly free, and the by-ſtanders acknowledging that the polypus was gone. To prevent the diſeaſe returning ſhould, I aſſured them, be my

particular care. The ſurgeon being now diſmiſſed, with a preſent of three crowns over and above what he had bargained for, I thruſt into each noſtril, as high as poſſible, tents compoſed of the fineſt powder of gentian, with the juice of ſcrophularia, changing them twice a day. Having thus far applied to the noſe approved good remedies, which I had formerly uſed with ſucceſs, I contrived the following medicine for the throat,

R. Gentianæ rad. ℥ſs
Scrophulariæ ℥s
Coricum ℥ſs.

Minutim terantur—hujus mixtionis drachmam capiebat in decocto verbenæ, cardui ſaſſafras bis in die.

"This he continued to uſe for two months, and has remained now for ten years in perfect health: he breathes eaſily, he takes his exerciſe with the mouth cloſe, nor is there the ſlighteſt remnant or ſhadow of the polypus remaining.*"

But of all the examples of ſucceſsful violence upon record, none is ſo well calculated to prove what the parts will ſuffer, to give the lie to all the imaginary fears of endangering the brain by violence done to the ſpongy bones, while extracting polypi with forceps, as that which I am now to lay before you. It will at once ſuggeſt many practical reflections, and teach you much of what you ought to know familiarly, concerning the relation of the tumor to the paſſages of the noſe and throat.

Mr. Manné, a reſpectable ſurgeon of Avignon, was the operator, and he related the caſe in a ſmall volume, publiſhed at Avignon, anno 1747: Not contented with the ordinary means of extracting the polypus, finding even the ſtrongeſt crow-bill forceps unavailing, he transfixed a large and cartilaginous tumor with many ligatures, each of which ſucceſſively he twiſted round the body of it, and with the help of theſe, uſed like a halter, and by pulling upon the projecting part of the tumor, and puſhing at the ſame time that part of it which he could reach by introducing the fingers into the throat, he delivered the patient of an enormous maſſy polypus, which, in bolting through the noſtril, made a noiſe like that of uncorking a bottle. The patient, from confuſion, pain, and loſs of blood, fainted; while the numerous aſſiſtants were left in a degree of aſtoniſhment, from which they did not ſoon recover: but theſe, with many other points, you will beſt learn from the narrative of Mr. Manné, which is very perſpicuous.

* Abbey Ceer's Hiſtoria, XXVIII.

" Etienne Ducrés, a villager of the Duke de Gadagne, ſeventeen years of age, born in the village of Saint Saturnine, in the Comptat, was attacked, in the year 1745, with a violent hemorrhagy of the noſe and throat, occaſioned by extreme heat, from the direct rays of the ſun ſtriking upon his head during the labours of the harveſt. During months the hemorrhagy returned from time to time. The rheum, and ſtoppage of the paſſage, which followed this, ſhewed the thickening of the membranes and glands, and ſoon after the patient began to ſnivel through the noſe: the paſſage was daily more and more obſtructed; he was no longer able to breathe through the left noſtril, which proved the exiſtence of a tumor.

" He now betook himſelf to Avignon, and there conſulted a ſurgeon, who, though he found an incipient polypus in the noſtril, found nothing, at that time, wrong in the throat: he pronounced the heats of the autumnal ſeaſon, to be very unfavourable to any operation. This unhappy delay gave occaſion to ſuch a growth of the polypus, that in the ſpace of a few months, it had not only filled the cavity of the noſe, but protruded backwards into the throat, and forwards through the noſtril.

" The patient, alarmed by this ſudden growth, had once more recourſe to his ſurgeon, who now attempted the operation; and holding the mouth open with a ſpeculum oris, he tried to twiſt and tear away the polypus from the throat, with crow-bill forceps, and pincers of various forms; but ſucceeded ſo ill as to tear away only one morſel, the ſize of a peach ſtone.

" Wearied with this fruitleſs labour, he was willing to try, whether he could not obtain a better hold on the polypus hanging out of the noſtril; but at the firſt preſſure of his forceps, there came on a hemorrhagy ſo alarming, both to the ſurgeon, and to all who aſſiſted at the operation, that their work was inſtantly ſuſpended: yet they made four more attempts of the ſame kind, within the eight ſucceeding days, and at each time were alarmed with the ſame hemorrhagy, and obliged to deſiſt. From the time in which theſe fruitleſs operations were altogether abandoned, the patient ſuffered periodical hemorrhages; ſometimes from the throat, (iſſuing from the lacerated end of the polypus), ſometimes from the noſe, (where alſo it had been torn and mangled with the forceps), and often he bled from both noſe and throat, the polypus growing inceſſantly, ſo as to burſt up the bones of the noſe.

" After the attempts juſt mentioned, there came a violent inflammation and abſceſs of one ſide of the face: the ſkin ſuppurated; the cartilage of the wing of the

noſe was ulcerated and opened; the ſuppuration, and all its conſequences, increaſed daily for two months, and at laſt ceaſed; and then the patient fell again into his old diſorder of periodical hemorrhages, the blood iſſuing chiefly from the noſtril, by the ſide of the polypus, and through a fiſtulous opening on the cheek near the noſe.

"In this deſperate and moſt deplorable ſituation, the patient addreſſed himſelf once more to his ſurgeon, requeſting his help. But this gentleman, unwilling to riſk his reputation further in ſo hopeleſs a caſe, contented himſelf with preſcribing ſome cathartic powders. The patient knew well that this was but an apology for leaving him to his fate, was anxious to find ſome one reſolute enough to do him good, and lighted happily on Mr. Manné.

"When this patient came to me, (ſays Mr. Manné), I converſed with him, conſoled him, ſupported his hopes, and his courage; and after ſome reſtoratives, and general remedies, undertook the operation in my own houſe, on the 25th of October 1747, two years after the commencement of the diſeaſe, in preſence of fifty gentlemen of the profeſſion. I did not chuſe to have ſo particular a caſe reported only on my own teſtimony, or on that of a few partial friends.

"In the preſence then of this reſpectable company, I began my operations, without having recourſe to the gag, or the ſpeculum oris, uſed in the former operations: I placed the patient oppoſite to a window; and reclining his head a little backwards, I intreated him to open his mouth wide, which he did very courageouſly; I then took a crooked biſtory, paſſed it betwixt the velum pendulum and the tumor, and ſlit up the velum from the ſide of the uvula to the palate bones, and proceeded then to the tumor itſelf, which was wedged in the throat. It was ſo firm, that it reſiſted the knife, as the attendants will teſtify, who cannot but remember the quantities of blood that flowed after each inciſion. The moment I began an inciſion, the flood of blood ſuffocating the patient forced me to deſiſt; when it ceaſed I renewed my attempt, only to be interrupted by a new hemorrhagy: till at laſt, at each inciſion, in conſequence of the hemorrhagy that enſued, the patient fainted, ſo that we were obliged to allow long intervals after each ſtroke of the biſtory, leſt the patient ſhould actually expire.

"The aſſiſtants were careful during all this time to ſupport the patient with ſpirituous liquor, and occaſionally ſpoonfuls of nouriſhing ſoups; and thus from inciſion to inciſion, from hemorrhagy to hemorrhagy, after many paroxyſms of faintings, did I, at laſt, partly by the knife, partly by tearing, ſeparate completely this

maſs of tumor, which lay in the throat, and which I immediately delivered to the bye-ſtanders, that they might examine its extreme firmneſs and ſemi-cartilaginous nature. The patient, reſtored as it were from death to life, had ſtill ſufficient ſtrength to walk from my houſe to the ſuburbs where he lodged, when he was preſently put to bed, and a proper diet and regimen preſcribed.

" It was not fit that we ſhould comply with the ſpirited and reſolute requeſt of this young man, who beſought us to finiſh our operations, and deliver him at once, of whatever remained of the tumor. I thought it prudent to allow at leaſt a few days of reſt and nouriſhment, to repair this loſs of blood.

" After three days the ſlight fever excited by the operation having ſubſided, and his ſtrength ſeemingly recruited, I reſolved to begin my operations anew. This was in October 1747: I placed the patient with his back reſting firm, and his head reclined and fixed: I knew too well the firm and cartilaginous nature of this tumor, to think of extracting it with forceps, which would but tear it into morſels, leaving perhaps, after the laceration of the naſal portion, and of that which hung backwards in the throat an intermediate part, which would ſtill obſtruct the noſtrils, and occaſion endleſs operations. I ſaw the noſtril beſides, too completely filled with this polypus, to admit my forceps, and the polypus itſelf too firm to be graſped in them: I had experience ſufficient moreover of the partial and imperfect ſucceſs of the forceps, in the caſe of Jaques Grenau; I therefore reſolved upon a more deciſive, and more direct method of unrooting the whole at one pull.

" With this deſign, taking in my hand a needle remarkably curved, threaded with a ſtrong waxed ligature, I transfixed the polypus as far back in the noſtril as poſſible: I then cut the needle away from the ligature, and (the ligature being double) I took firſt the two lower ends, and tied them firm round the lower part of the tumor, and the two upper ends I tied in like manner round its upper part, and then taking one end of each, viz, of the upper and lower ligature, I twiſted them on one ſide, I tied and twiſted the two other ends on the oppoſite ſide, and thus having transfixed the center of the polypus, and twiſted theſe numerous ligatures round the ſides of it, I had got a hold which could not ſlip: I graſped the four ligatures, twiſted them into one, and pulling by this hold, I brought the polypus ſo low, that not merely the part thus transfixed with the crooked needle, but half an inch more of the polypus appeared without the noſtril. I took now a ſecond crooked needle, transfixed the polypus with a ſecond double ligature, like the firſt, tied and knotted it in like manner, and having thus got a firmer purchaſe, I twiſted the four ends of this ligature along with the firſt, round the tumor; and now ſhaking the whole

maſs of the polypus from ſide to ſide, then moving it with a rotatory motion, then pulling from right to left, and next reverſing that motion, by moving the maſs from left to right; in ſhort, by moving and ſhaking the polypus in every poſſible direction, I ſought to diſengage it from its connections, pulling towards me always with ſuch ſtrength, as to make the tumor follow every lateral motion, and yet with ſuch a meaſured force, as to prevent the ligatures breaking; for had that unfortunately happened, the tumor itſelf would have receded into the noſtril, while a fragment only would have remained in my hand.

" By ſucceſſive and regulated efforts, I ſo far ſucceeded, as to elongate the tumor ſtill more; an inch more of its length appeared without the noſtril; I ſtruck a third double ligature through the polypus, which I twiſted as formerly, and added to the others; and with this new purchaſe, I pulled ſo ſucceſsfully as to elongate the tumor ſtill more; and transfixing it again with a fourth ligature, as deep as poſſible within the noſtril, I obtained, by pulling with the whole ſixteen ligatures inconceivable power and purchaſe.

" I was now on the point of extracting the polypus by the roots; and by the happieſt chance obſerved a trifling circumſtance (for the moſt trivial circumſtances are in the critical moment of an operation of the very laſt importance) which contributed greatly to my ſucceſs: having introduced two of the fingers of my left hand crooked, into the throat, to feel whether the hold I had upon the naſal branch of the polypus affected that within the fauces, and whether the guttural part of the polypus was of ſuch a form as to paſs eaſily back again through the opening from the throat to the noſtrils, ſo as to follow the naſal branch when it was extracted, I felt diſtinctly, that by pulling the ligature which ſurrounded the naſal branch of the polypus, I not only moved at each pull, the branch which hung down into the throat, but alſo was ſenſible that this lower branch, (the branch which I had formerly cut with the biſtory,) conſiſted of two tubercles or heads, greatly exceeding in ſize the poſterior opening of the noſtrils. With my fingers of the right hand, twiſted among the ligatures ſurrounding the naſal branch, I pulled upon it; while with the fingers of my left hand, thruſt into the throat, I puſhed back towards the poſterior opening of the noſtril, the tubercle which was neareſt to it; then by a ſecond effort of the ſame kind, I forced the ſecond tubercle to follow the firſt; and being ſenſible that both were fairly entered into the paſſage of the noſtril, I continued to thruſt with the fingers of the one hand againſt the guttural part of the polypus, pulled with the other upon the naſal branch, and redoubling my efforts, and increaſing the force, in proportion to the progreſs of

the polypus, it, after much ſtruggling, and many repeated endeavours, bolted (after one final effort,) ſo ſuddenly out of the noſtril, that the noiſe was like that of uncorking a bottle.

" The moment the polypus was torn away, you would have thought the patient would have expired, the blood burſting out in a full flood from noſe and mouth: but as the blood burſt out thus ſuddenly, it ceaſed as inſtantaneouſly; for it proceeded chiefly from the veſſels of the polypus diſtended by the compreſſion, which were no ſooner emptied than they ceaſed to bleed.

" The ſpectators did not ſoon recover the amazement with which they were ſtruck at ſeeing ſo enormous a maſs of tumor iſſue from ſo narrow a paſſage. This polypus was covered with a membrane, very white, ſmooth and poliſhed, with an infinity of ſmall veſſels circling upon its ſurface; and its ſurface was dotted with an infinite number of bloody points, red with drops of blood, denoting the manner in which it had adhered to the pituitary membrane.

" No ſooner was the lad delivered of the polypus, than he ſtraightway breathed through that noſtril freely, and was as ſuddenly relieved of an inſupportable headach, with which he had been night and day tormented for more than a year. He recovered his ſenſe of ſmelling; but what is more ſingular, he recovered at the ſame time the ſenſe of taſting, which he had entirely loſt. After this ſecond operation we waſhed out the paſſages with deterſive and vulnerary injections, to which ſpirituous tinctures were neceſſarily added, to correct the putridity of the foul and very fœtid ſanies, which, by its horrible fœtor, declared the diſorder of the parts produced by this tedious diſeaſe, and the recent violence done to them.

" Yet the patient was in perfect health, weakneſs excepted: he was free from fever: he ſlept as if he would never awake; and when he roſe it was with the appetite of a famiſhed creature, ravenous for food. But the attendants were inexorable, and never permitted him to exceed the diet preſcribed for him.

" Two days, and no more, had paſſed, when the patient, all once obſerved, that he had no longer that perfect freedom in ſwallowing and breathing, which the operation had reſtored him to ſo ſuddenly. He was ſenſible of a new obſtruction in the throat, little differing from that which he had ſo long endured: I viſited him on occaſion of theſe new ſymptoms, and I will ingenuouſly confeſs, that if I was aſtoniſhed at the ſize and nature of the firſt polypus, my ſurpriſe was inexpreſſible, when I found the throat choaked anew, with a polypus of ſuch enormous ſize, that it ſeemed as if not a particle of the firſt had been actually deſtroyed. I, with-

out loſs of time, convoked the phyſicians and ſurgeons who had witneſſed the firſt operation. They were, I believe, not a little aſtoniſhed to ſee, apparently, the individual polypus which they themſelves had aſſiſted to extract, re-occupying its proper place. Curioſity led us to examine how this could be, and no conjecture ſeemed more probable, than that this new polypus had fallen down from the upper and back part of the noſtrils, where it had been ſqueezed up by the former polypus, and nitched in the narrow cavity: the extirpation of the former, it would appear, had made way for this falling down.

" I did not long heſitate how to act, but waited only the return of my patient's ſtrength, to cut off this polypus alſo: for I was afraid, in his preſent weakneſs, of the hemorrhages inſeparable from ſuch operations. I allowed however only ſix days to paſs over, when convoking the ſame ſurgeons who had aſſiſted me at the former operation, I, in their preſence, on the third of November, cut out from the throat, a portion or knob of the new polypus, repreſented in the drawing, which I accompliſhed now with much leſs pain, becauſe it hung by two pedicles, and was ſofter than the former: the hemorrhagy was moderate, and nothing to be compared with that of the former operations.

" The patient inſtantly felt the benefit even of this partial extirpation, for the throat was entirely freed, and he even began to breathe through the noſe: but this quiet ſtate he did not long enjoy, for before morning a new lobe of the polypus had deſcended, occupied the place of that juſt amputated, and all his difficulties and diſtreſſes returned with the tumor. Nothing remained for me, but to relieve the patient, by cutting off all the heads of this Hydra, or abandoning altogether an operation, in which I had already atchieved ſo much, which had coſt myſelf ſuch anxieties, and my patient ſo much pain and ſuffering. My ſpirit was ſo raiſed, and the patient himſelf ſo full of confidence and courage, ſo well reſolved to ſubmit himſelf to whatever I thought fit to do, that it was determined to cut this polypous maſs once more, and to the quick. But I had found ſuch advantages in allowing an interval betwixt each operation, that I imagined I could not, on the preſent exigency, act more prudently, than to allow the patient a ſhort reſpite.

" But while I was meditating this new operation, the ſingular nature of the caſe drew together all thoſe, who had hitherto in compliment to me, or through charity towards the patient, watched the courſe of his diſeaſe, and, by perpetually thruſting in their fingers, touching the polypus, torturing the noſtril, ſearching in various ways, ſome to aſcertain its ſize, others to feel for its root, others with the hopes of

reaching its pedicle, and diſengaging the tumor, without having further recourſe to the knife, the roots were finally ſo torn and lacerated, and the body of the tumor itſelf was ſo compreſſed and bruiſed, that in a few days it began to ſhrink and ſhrivel, fell into ſuppuration, became rotten and fœtid, and dropt away piece-meal in ſmall portions, one of which however was as long and as large as a thumb: by this waſting of the tumor the patient was freed of it in a few days, without the help of the knife or cautery, nor did I chooſe to meddle with the roots of the tumor, both becauſe I thought that where nature had done ſo much, it was wrong to interfere; and becauſe I could perceive that the root or baſis of the tumor was melting away ſlowly of its own accord."

Mr. Manne has added in his book, in teſtimonial of theſe facts, the affidavit of nine of the Gentlemen who attended the operation, and of François Payen, in whoſe houſe the patient lived.

"This," ſays Mr Manne, in concluding the narrative, "is a deadly blow to the opinion of thoſe who believe in the plurality of polypi:"—by no means: it is as I have ſaid, in the words of the fable, one looking on the ſide of the ſtatue which is white, while another looks on that which is ſable. Polypi of this magnitude are uſually, but not neceſſarily, ſolitary.

A narrative ſo very intereſting as this, ſhould not be diſmiſſed ſlightly; it ſuggeſts various uſeful remarks; it opens up to us much of the rude practice which prevailed even in the laſt century, of ſlitting up the palate, pulling with great iron forceps, bolting out the tumor at the ſame time, by preſſing behind the palate with the fingers; extracting by main force of pulling, with the help not unfrequently of a great crooked knife. We are led by this narrative to doubt the prognoſtic handed down from the times of Fabricius, or indeed of Celſus, of the ſoft polypus being mild, the firm and hard cancerous! Every polypus is ſoft in its commencement, firm in its perfect growth: I never have grappled with a polypus of this ſize, or any thing approaching to it, which was not ſemi-cartilaginous of a ſtony hardneſs; ſuch at leaſt were thoſe of a young man of the name of Reid, and of one Gow, which I extirpated with ligature; their caſes I ſhall preſently mention, for other purpoſes than to prove this fact. But ſurely, if ever a long and firm polypus ſhould by nature, and by irritating cauſes have become cancerous, this might have been ſo; nay, I doubt not, that in examining the records of our profeſſion, you will find thoſe cartilaginous polypi the moſt frequently and effectually cured; and I ſhall preſently ſtate to you my reaſons, why I would rather

grapple with a big polypus, than a ſmall one; rather with a tumor that reached the throat, and depreſſed the ſoft plate, than with one which were but indiſtinctly felt in the noſtril. The latter is ſmall, delicate, and yields to the forceps; the body is cruſted ſo as to give no hold, while the neck and root remain untouched; the latter, in proportion as it grows firmer in its body, grows ſmaller in its neck, or pedicle, its root cannot much enlarge, while its body does; the diſproportion betwixt the tumor and its pedicle is daily increaſing, and becoming more favourable to all kinds of operation, whether rude or ſkilful. The polypus, by this proceſs, has been known, I have known it myſelf, drop away in proceſs of time, as ripe fruit drops from the tree.

The merit of the operator, in this ſingular caſe, is leaſt of all to be paſſed in ſilence. The enterpriſe was bold, manfully conducted, and attended with ſucceſs every way gratifying. Never perhaps was there a more deſperate ſituation than that of the patient; the face deformed, the cheek in a ſtate of ſuppuration, the griſtle of the noſe perforated, the polypus protruding through the opening of the noſtril, filling the cavity of the noſe, and extending to the throat: the diſeaſe neglected for two years; the patient tortured with pain and confuſion of head, dying of hemorrhagy, and ſoliciting the ſurgeon to perform any deſperate operation that might promiſe relief. The polypus of that firm and cartilaginous texture, which all writers have agreed denotes a cancerous diſpoſition. Even ſuch a tumor was torn, mangled, cut, one way or other extirpated, and finally cured! From this what ſhould we infer? Firſt, that if there ſeem ſomething of good fortune in that perpetual laceration, with the fingers of inquiſitive viſitors, by which the patient was ultimately delivered by ulceration of the polypus, or its remains; ſtill it was that ſort of good fortune which the bold and ſkilful deſerve; and next it leads us to indulge the belief that it is among the firſt moral duties of our profeſſion, to attach ourſelves more faithfully to our patient, in proportion to his danger, not to ſhrink with heartleſs policy from the ugliеſt operation his condition may require. It is not becauſe we are uncertain of achieving a cure, acquitting ourſelves with honour, that we are to abandon our patient; where nicer and more delicate operations fail, we muſt, at his requeſt, betake ourſelves to the more rude and deſperate. It is not the barbarous or cruel manner of our operation, that we have to conſider, but its tendency to preſerve life: It is not by our feelings, but our reaſon, that we are to be guided; elſe all great and important operations ſhould be abandoned; even lithotomy or trepan ſurgeons would decline performing; for thoſe alſo manifeſtly

endanger life, and are attended, even in the moſt ſkilful hands, with circumſtances of particular cruelty. You know now by experience, in this one caſe at leaſt, that operations for the cure of polypi, to be ſucceſsful muſt be in ſome degree cruel: Operations within the narrow paſſages of the noſe and throat, like thoſe of midwifery, where we are forced to introduce the hand and inſtruments, require perſeverance, even violence and determined courage, more than ſkill or delicacy: and in both kinds of operations, theſe natural paſſages bear, without eſſentially ſuffering, a degree of violence, which thoſe unaccuſtomed with practice would be afraid to uſe. Hemorrhages from the womb, or from the noſtrils, and the violence neceſſary in extracting a polypus, or delivering a woman, are ſuch as would terrify a timid man, and prevent him from performing his moſt neceſſary duties; whereas to the man of experience and courage, theſe conſiderations are but an incitement to do his work reſolutely and ſpeedily. From this feeling it is that the fear of a patient ſuffocating or bleeding to death, incites the operator; like perſonal danger; he feels that the preſent fate of his patient is in his hands, he acts by an impulſe like inſtinct, he is unconſcious of the efforts he makes, and accompliſhes things during ſuch a ſtruggle, which, in cold blood he could not do. This is the kind of merit that the operator had in this ſingular caſe.

Often the methods of the older ſurgeons are ſo incorrectly, or at leaſt ſo indiſtinctly related, that we learn little more than this, that wherever the polypus was ſufficiently large to project, they could never reſiſt the deſire of extracting it by main force: they ſeldom uſed the knife, or even cauterized the roots of a polypus. But Purmannus appears to have approached to a better manner than any of his predeceſſors; you will be ſenſible from the caſe I now relate *; that while his aſſiſtant

* In the month of March 1687, a taylor came to me, by name Chriſtian Shultze, about twenty-eight years of age, who had a very large polypus in his right noſtril, which hung out of the noſe upon the upper lip, about the bigneſs of a large Muſcadel pear, which, when I pulled towards me with one hand, and with a ſpatula in the other, held down the tongue, I could not only ſee that one root went behind the uvula towards the throat, but that the other root went near the left eye, towards the ear. While I was doing this the eye watered, was very painful, and againſt his will, ſhut itſelf, as often as I pulled the polypus, which certainly was a very ſtrange accident.

I proceeded to the cure in this manner. Firſt, I cauſed my man to pull the polypus from the noſe towards him, as hard as the patient was able to endure it, then coming to one ſide, I put the forceps, or mortificator, into the noſe as high as I could reach, and at once pinched off the whole polypus, and brought it out; but the root, which was in the mouth, I burned with an actual cautery three times, while my man kept down the tongue with a large and broad ſpatula made for that purpoſe. After which

or apprentice, pulled upon a great polypus, which hung pendulous from the noſe, as large as a Muſcadel pear, he introduced the forceps towards the root of the tumor, and pinched it off: and indeed it has often occurred to me, that ſhould I ever fail of extirpating by the ligature, thoſe great polypi which tend backwards to the throat, and depreſs the palate, I ſhould operate, not as theſe gentlemen have done, by ſlitting the palate, by cutting acroſs the tumor, when it appears behind the palate, or pull with great forceps introduced by the mouth; but in examining the diſeaſe I ſhould, by feeling with a bent probe, or various ſhaped hooks, ſearch the noſtril for the root; if I could then hook the neck of the tumor, ſo as viſibly to move the body where it appears in the throat, I ſhould be ſure of my ſtroke, and proceed with confidence; if fixing a ſharp hook into the tumor behind the palate, and paſſing a blunt one into the noſe, I could move the tumor alternately upwards, and downwards, I ſhould then be able, either by pinching with the forceps, to pinch off the root, as Purmannus ſeems to have done; or rather, following my uſual method, I ſhould paſs one of the knives, ſmall and biſtory-ſhaped, ſuch as I have hitherto uſed, deep into the noſtril, and cut the root there: and take notice, that the ſurgeon who, in handling a great guttural polypus, reaches its root by the noſe, is ſure of cutting it in the narroweſt part of its neck, cloſe by the ſpongy bone.—This operation, if dexterouſly performed, would be ſpeedy, almoſt painleſs, and as effectual as if the tumor were cutaneous; and the hemorrhagy would be very ſlight indeed, and eaſily ſuppreſſed by the plugs. I have conſtantly obſerved, that the hemorrhagy which is dangerous or fatal, is that only which proceeds from univerſal ulceration, and an extenſive ſurface; not that it proceeds from the ſmall root of a polypus, or the ſtroke of the knife.

There is yet, among the practices of the older ſurgeons, one which, though the moſt obſolete, deſerves, I think, the attention of a practical ſurgeon in an eſpecial manner; becauſe it relates to many of his operations, and may, I think, ſuggeſt occaſional methods very uſeful; it is an operation not very diſtinctly defined, otherwiſe than by its name, which expreſſes the purpoſe of it, viz. The *Compunctio Polypi*, or, as I think I have ſomewhere read it, *Comminutio Polypi*; it was a la-

operation, it ſeparated very kindly, and the patient, in leſs than ſix weeks time, was perfectly cured; though I ſearched no further after the other root towards the ear, becauſe the other anſwered the end.

Immediately after, I was called to the Herr Chanzeler V. H. of this place, who had much ſuch another polypus, though it did not hang out of the noſe, whom I undertook to cure in the ſame manner; but he being put under an arreſt at the ſame time, we could not proceed.

cerating or transfixing of the root ſo as to kill the body; and though it ſeems to have been performed according to no very regular nor eſtabliſhed plan, is yet commemorated by various authors. Heiſter mentions it in very brief terms, "There are yet ſeveral methods (ſays he) of removing polypuſes; thoſe which are recent will ſometimes ſhrink and diſappear, by repeated punctures or ſcarifications with a ſcalpel or lancet, as Severinus aſſerts he has experienced." Hildanus gives the title De Compunctione Polypi to his ixth chapter, and ſpeaks reſpectfully of this operation of Severinus. He deſcribes it as an operation performed by itinerants rather, whoſe method was not expreſsly known, than by regular phyſicians, and ſays, "The report goes, that they tie together three long needles, and placing the head of the patient in a favourable poſture, they ſcarify the tumor with the points. They then anoint the punctured part with oil. No ill conſequences are found to enſue; the proceſs is repeated from day to day, and the polypi ſhrink and waſte till the patient is in a little while reſtored to perfect health. Such," ſays Hildanus, "is the method ſuggeſted by Hierocles, a celebrated writer in the veterinary art. Nor do I ſee why an operation ſo gentle ſhould not be transferred to ours*?" Nor can I imagine a reaſon againſt a practice ſo likely to prove ſucceſsful; ſo generally believed among the older ſurgeons to be profitable in the ſmall ſpongy and bloodleſs polypi, which occupy the noſtril alone.

It is reported, that the method of killing a polypus by a ligature, drawn high round its roots, and tightened from day to day, is of ancient date. But though I willingly commend, and as willingly borrow from the works of the old ſurgeons, I find nothing to praiſe in their manner of applying the ligature, nor indeed any thing but their boldneſs and courage, in grappling willingly (ſometimes, it muſt be confeſſed, after having bargained for their thirty or fifty crowns,) with the moſt bulky and formidable polypi. Ligatures, no doubt, they did apply; but aſſuredly they had no other deſign, than to ſave that blood, which the patient could not but loſe when they cut them off with their biſtouries. The deſign of puſhing up the ligature to the baſis of the tumor, never entered ſo far into their ſyſtem of operating, as to lead them to think even of puſhing the loop up to the root with a forked probe. Glandorpius paſſed a thread of ſtrong ſilk round the polypus,

* *De polypi compunctione.* Sunt qui, ut fama eſt, tres acus prælongas ſimul deligent & inverſo capite tantiſper aculeorum mucronibus lancinent, dum omne vitium punctim exemptum extabeſcat, deinde oleo protinus eluunt, hoc idem ſequentibus diebus tentant, donec priſtinæ valetudini reſtituant hominem. *Hæc Hierocles rei veterinariæ ſcriptor nobilis l. ejus operis* 1. *c.* 2. quæ levis opera noſtris hominum polypis quid vetat, quominus accommodari queat?

drew it tight, ſecured it with a knot, and then cut off the tumor cloſe to the ligature. "But to perform this operation ſucceſsfully," ſays Heiſter, "it will be neceſsary to extract the polypus as far as you can out of the noſe by pliers. This too muſt be done gradually and gently, leſt you break off the tumor *before* you have made the ligature; it muſt be left upon the part *after your abſciſſion*, till it is ſpontaneouſly digeſted off; *and* thus *you cure the diſorder without running the riſk of a profuſe hemorrhagy*, which is ſometimes ſuch as to kill the patient, eſpecially when the polypus is removed by avulſion." Such were the purpoſes of the ligatures, uſed by the older ſurgeons; it was a tourniquet, merely intended to prevent the loſs of blood in their rude amputation of the tumor. Heiſter ſeems to have had a conſciouſneſs of the imperfection of this method, and to have ſought a more effectual manner of fixing the ligature. In the caſe of an old lady, afflicted with polypus, he ſtruck his ligature through the body of the tumor within the noſtril, but far from the root *.

But all theſe methods were violent and rude. Seldom did the older ſurgeons affect gentle means; never indeed, that I recollect, except in this ſolitary inſtance, when they ſtood in the point blank danger of diſgrace from hemorrhagy, when cutting with their crooked knives.

They ſcrupled not to ſlit up the noſtrils; and the cleaving the palate, with the firſt ſtroke of their biſtory, from the uvula to the bone, was no uncommon way of

* Upon being aſked by the lady, and her friends, what method I judged moſt convenient to remove it by, I began to think, if there might not be a gentle method of removing it by ligature; ſince cauſtics had been tried in vain; and to attempt its exciſion or evulſion, in a perſon of her age, could by no means be expected to ſucceed. I now began to contrive in what manner I ſhould convey my ligature round the baſis of the polypus, which, being here ſeated far within the noſe, and cloſely filling up its cavity, made this part of the operation of no ſmall difficulty; and therefore while the patient was preparing, I invented and procured the inſtrument repreſented in Tab. 19. fig. 12. which anſwered my intention very well. Through the aperture (B) in the point of the crooked end of this inſtrument, I tranſmitted a double thread of ſtrong ſilk, and fixing the patient conveniently againſt the light, I elevated and opened the pinna naſi with my left hand, and holding the inſtrument by the handle (A) in my right hand, I conveyed its end, with the thread, carefully betwixt the pinna and polypus upwards, and when the thread came into view, extracted the ſame out of the noſe, and then gently depreſſing my inſtrument, laid it aſide, leaving the thread behind it round the polypus in the noſe; and drawing the thread tight, I then tied it with a double knot. The next day I repeated the ſame operation; and afterwards I made a ligature round the root a third time, in the ſame manner; by which means the excreſcence became very hard and black. On the fourth day, the polypus appearing very hard and black, I pulled the ſtring a little, to obſerve whether it was looſened, and to the admiration of the patient and ſpectators, it brought away the polypus, like a plumb or damaſcene, without cauſing any pain.

making room, for cutting the polypus itſelf at the ſecond ſtroke. " Before I conclude," ſays Garengeot, " I muſt mention to you, that often polypi ſo entirely obſtruct the noſtril, as to prevent the poſſibility of introducing inſtruments to graſp the tumor; and in ſuch circumſtances the ſurgeon has no choice, but muſt DILATE *the noſtril with a cutting inſtrument.* The ſole difficulty is to know at what point, or in what direction *. Theſe are polite terms, " dilating the noſtril with a cutting inſtrument," for ſlitting it up with a biſtory; and where the only difficulty was, about the direction, that would not ſtand long in the way of a ſurgeon of this complexion. Indeed Garengeot does not long refrain from the plain blunt word of ſlitting the noſtrils, " Il faut *fendre le narine dans toute la longueur de ce pli.*"

Such was the horror of ſurgeons at this diſeaſe, or rather at this ſtage of it, that they ſeem to have thought no way exceptionable, that afforded the ſlighteſt chance of deſtroying the tumor. Petit, Garengeot, Dionis, Le Dran, Heiſter, Levret, and Tulpius, all the beſt authors, mention every poſſible method with equal commendation, as if the ſurgeon had no choice nor limits in his operation, but were to twiſt, tear, burn, pull, and deſtroy, by whatever methods he beſt could, a part at leaſt of the polypus, if he could not unroot the whole. They were, you will find at all times, as ready to ſlit the noſtril, as to commit any leſs remarkable atrocity; and no operation was ſo univerſally applauded, as that of ſlitting the palate. We cannot, ſays La Faye, extirpate by the noſtril, polypi which deſcend backwards and depreſs the palate; for what we ſee of ſuch polypi in the noſtril, is but a ſmall portion,

* Avant de terminer cette matiere, il eſt bon de ſçavoir, que les polypes qui ſe montrent dans les narines occupent quelquefois tellement leur ouverture, qu'il n'eſt point poſſible de pouvoir introduire un inſtrument dans le nez pour embraſſer commodement le polype: Dans une pareille circonſtance on eſt obligé de dilater la narine avec l' inſtrument tranchant, afin d'agrandir ſon ouverture; mais la difficulté eſt de ſcavoir l' endroit ou doit ſe faire cette dilatation.

Suivant ce precepte (que je ne donne pourtant que pour les inciſions qui regardent la peau du viſage, ſa graiſſe, ſes cartilages, &c.) l' endroit ou il convient mieux d' inciſer la narine pour agrandir ſon ouverture, eſt a la baſe de ſon aile; ou l'on voit un pli a la peau en figure de croiſſant. Il faut fendre la narine dans toute la longueur de ce pli; ce qui donne plus de facilité pour embraſſer le polype, & en faire l'extraction, comme nous l' avons dit ci-deſſus.

L' operation faite, rien n'eſt plus facile que de procurer la reunion de cet endroit diviſé de la narine. Il n'eſt point neceſſaire de ſuture, le ſimple attouchement des deux levres de la plaie maintenus ſeulement pendant vingt-quatre heures, par le moien d'un ſimple bandage, ou d'un emplatre agglutinatif eſt plus que ſuffiſant.

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which eaſily follows the body of the tumor, when it is extracted by the mouth; and to extract it by the mouth, we muſt imitate the manner of Petit, viz. *firſt, divide the fleſhy palate with a biſtory*, and then catch the polypus with crooked pincers on the fingers *.

Garengeot, who was ready to praiſe every extravagance, ſpeaks in raptures of this. It ſeems to have been their univerſal rule, when a bulky polypus depreſſed the palate, to extract it by the mouth; and the caſe mentioned by Heiſter and Garengeot, with tokens of approbation, was that of a boy of thirteen years of age, from whom Petit, in preſence of many ſurgeons, and to their great aſtoniſhment, extracted, with an iron ſcoop and his fingers, a fleſhy tumor, reſembling in ſize and firmneſs the gizzard of a turkey, of a triangular form; and they chiefly praiſe him, becauſe, in preparing for this, he performed the preliminary operation of ſlitting up *the ſoft palate in two places* †. Nay, great ſurgeons contended for the honour of this notable invention. Mr. Manne diſputed it with Petit ‡. This operation I once ſaw performed by a country ſurgeon, without any ſuch rational deſign, from mere ſimplicity.

This operation of cleaving the palate they never ſhrunk from, becauſe it is neither bloody nor dangerous, and it facilitated their main deſign; the conſequences

* On ne peut pas emparer par le nez les polypes que deſcendent derriere la luette & jettent la cloiſon charnue en devant. Car ce qu'on voit de ces ſortes de polypes dans les narines, n'en eſt qu'une petite portion, qui ſuit aiſément le reſte du corps polipeux, quand on l'arrache par la bouche. Pour les tirer plus facilement de cette derniere maniere, et les emporter entierement, il faut, a l'imitation de M. Petit, couper avec un biſtoire a la cloiſon charnue du palais, & ſe ſaiſir enſuite du polype avec des pincettes courbes, ou avec les doigts.

† Il commenca d'abord par couper la cloiſon du palais en deux endroits, afin de toucher plus facilement l'attache du polype: il coupa enſuite le polype, qui tenoit par un pedicule de la nature des cartilages, au vomer & du coté droit vers l'aqueduc. Il l'arracha apres de force, avec une petite cuillier de fer & ſes doigts. Tous les ſpectateurs furent ſurpris de voir ſortir de la bouche de cet enfant, une tumeur charnue qui etoit groſſe comme le poing, & d'une figure triangulaire; en un mot qui reſſembloit a un gros *geſier de dindon*. Le malade prononcoit bien ſes paroles, apres cette operation, et dormoit tranquillement, ce qu'il ne pouvoit faire auparavant.

‡ Dans ſes notes, pages 582 & 583 note (a).

M. Manne, chirurgien d' Avignon, dit dans une diſſertation qu'il donna au public en 1717, qu'il eſt le premier qui, dans ce cas, ait coupé la cloiſon du palais, et que le ſuccés qu'il avoit eu donna quelques mois aprez occaſion a M. Petit de repeter a Paris cette meme experience, qui lui reuſſit egalement.

Platner dans ſes Inſtituts de Chirurgie, No. 784, page 497, propoſe auſſi de fendre la cloiſon du palais; mais il ajoute que cela empeche dans la ſuite la deglutition.

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they never reflected on, which, though in some degree distant, are not less melancholy. I shall explain what consequences I apprehend from slitting the palate, by detailing an opinion given in the case of a fine boy, about fourteen years of age, whose uncle, a gentleman from the West Indies, brought him to me. The sole question proposed to me was, whether, the palate being grown together, I could not perform some operation, by which he might be made to speak with a more sonorous voice, and swallow more easily?

Narrative. "This young gentleman was about fourteen years of age, of a slender and delicate habit of body, born in the West Indies, and being nursed and kept by his father's black servants, was, without the family being informed of it, deeply infected with the yaws, at the tender age of three years. Though cured by the plantation surgeon, and now enjoying the most perfect health, the condition of his throat proves, that he must have lived long in a sad condition, and must indeed have come into the surgeon's hands in a desperate stage of the ulceration; his uncle believes that the cure was accomplished by calomel and the decoction of the woods, and that all the ulcerations have been for many years healed. The boy is spirited and resolute, and says, that to recover the natural, I may say the human sound of his voice, he will stand stoutly to any operation I please to perform. The adhesion of the soft palate to the back of the pharynx, by which the posterior opening of the nostrils is closed, may easily be dissected; there can be no hemorrhagy, no danger, little pain: should this be done?

"*Description of the state of the palate and pharynx.* To resolve this question, allow me to describe to you the very singular condition of these parts. The whole of the throat must have been in a state of complete ulceration; but it had affected more the membranous parts than the glands; for the tonsils are entire and perfect, while the soft palate and pharynx have so adhered, that you can hardly imagine they ever had been separate, or that the appearance is any thing but a mal-conformation. The whole circle of the fleshy palate adheres to the back part of the pharynx; and it is not an adhesion slight, or superficial, of the edge merely; but the very substances of the velum pendulum, and of the pharynx are so mixed and incorporated, that you could not believe them ever to have been otherwise. If there be any distinction of substances, it is only that which is marked by a firmer and whiter line, running in a semicircular form; the much thickened and ulcerated flesh of the palate, seems by swelling to have been pressed as close upon the back of the pharynx, as if it had been held firm by stitches. There is not the slightest vestige of the openings to-

wards the noſtrils: one flat curtain of firm fleſh, hard as cartilage, extends from the poſterior arch of the palate bones, and declines inſenſibly into that part of the tube which we call the back of the pharynx, and by its inclination, like a pent-houſe, makes a perfect and imperforated arch. In the middle of this arch, there is a whiter ſpot, which marks the place where the uvula had been, which has by ulceration been entirely deſtroyed. The center of the arch, where the uvula or pap was originally, has adhered with particular firmneſs; and from that white ſpot, there runs down in the center of the back of the pharynx, a white ridge or prominent line, or rapha, which feels not merely hard, but abſolutely cartilaginous; and on the face of this flat curtain, formed by the adheſion of the palate, and a little towards each ſide, appear the tonſils; their flat ſurfaces, and excretory ducts turned directly towards you, and as the arches of the palate are comprehended in the adheſion, nothing in any degree reſembling the natural ſtructure of the throat is to be diſtinguiſhed; there appears but one flat plain partition, extremely firm.

"*Advice.* The boy's ſwallowing is imperfect, from want of contractility in the cicatrized parts, to embrace cloſely the morſel, as it deſcends from the mouth into the throat. His voice diſguſting, becauſe the air and ſound are prevented from paſſing, as in the natural ſtate of the parts, through the noſtrils, and circulating among the naſal cells, which give the voice its reſonance: but his condition is without a remedy. I am aſſured of this by reaſoning, and by experience: firſt, the uſe of the velum is now irrecoverably loſt; it ſerves in its natural ſtate as a valve, moveable, and muſcular, which, while we are ſpeaking, directs a due proportion of the air through the noſtril; and while we are ſwallowing, claps ſo cloſely over the poſterior openings of the noſtrils, as to cloſe the throat above, and prevent the food or drink, when puſhed from the mouth into the pharynx, from paſſing up into the noſe: but the part is now ſo indurated by the ulceration, that its muſcles are no longer moveable, the ſubſtance of the palate too is indurated; the ſurgeon might, with a knife and long crooked probe, make firſt a central opening, and then diſſect towards either hand, till he had diſengaged the whole of the velum; but it could never again be a flexible valve, moved by the contractility of its own muſcles: the opening would remain with rigid edges, round or ſlit-like, according to the manner of healing; all that were divided would retract, leaving a wide opening into the noſtrils, but no valve to cover it; the patient would be in the condition of theſe unfortunate perſons, in whom the older ſurgeons cut off, (as they uſually

did), or ſlit up the ſoft palate, to make their way to polypi of the noſtril; whatever he did not ſwallow with great precaution, rather by letting it glide over his throat, than forcing it by the uſual effort, would ruſh upwards into his noſe; and his voice would reſemble that of one who had loſt his palate by the venereal diſeaſe. When all the air, or much of it, goes out by the noſe, there is not enough paſſing through the mouth to be modulated into diſtinct ſounds; thence it happens that the voice is more guttural when there is too large an opening towards the noſe, than where there is none. I know well what effect will reſult from ſuch a rigid opening in the palate, not ſecured by any moveable valve, for I have ſeveral times ſeen ſuch adheſions of the palate to the pharynx, with partial openings, rigid and continually open, ſuch as would remain in this boy after any form of inciſion; and in thoſe patients every mouthful of food or drink ſwallowed raſhly, went upwards into the noſe.

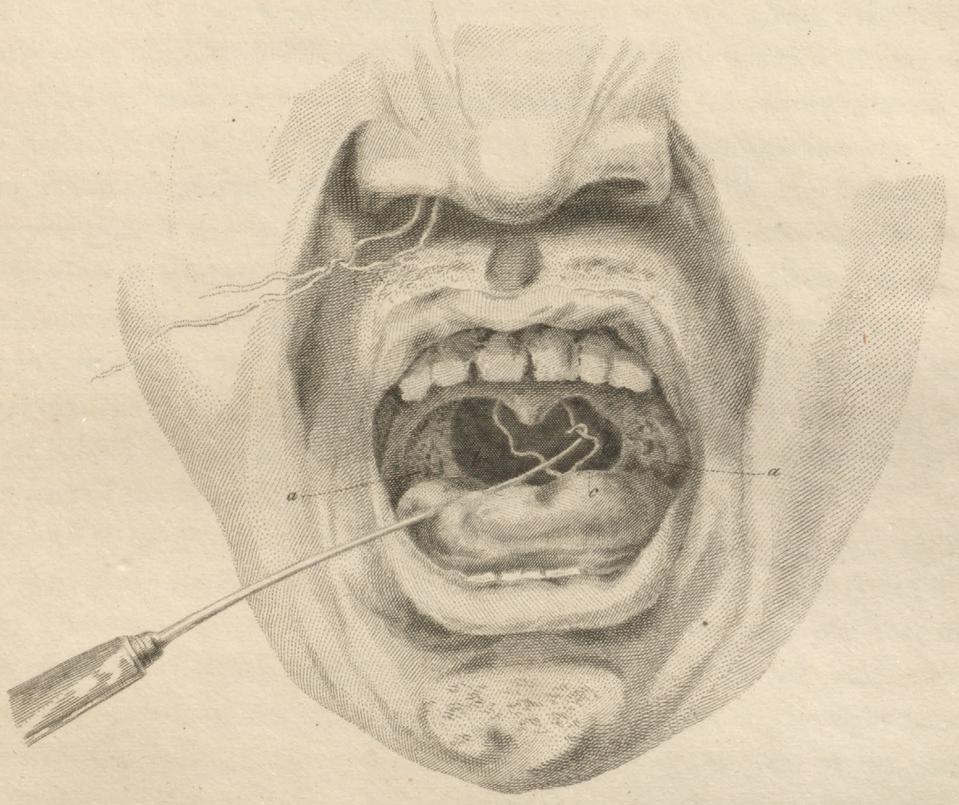
"I counſel you, neither to requeſt, nor allow any opening to be made in this adheſion, which ſo entirely and happily cloſes the noſtrils: had any ignorant ſurgeon done ſuch an operation, (and it is one into which one might be eaſily ſeduced,) he would have been diſappointed and ſhocked at the ill conſequences of what he had done ſo unpremeditatedly. Should you ever be ſo unwiſe, as to require a ſurgeon to do an operation, which it is but too eaſy to perform, be aſſured, that the part can never be cloſed again; the edges of the inciſion will heal, the opening will remain, and your nephew will never again ſwallow comfortably, nor ſpeak intelligibly."

To theſe rude and cruel methods, the beſt of us may need to have recourſe; and it is a merit to bend up our mind to ſuch cruelties, for our patient's ſafety: but when the polypus has attained this ſize, and fills the noſe, and depreſſes the palate, its bulk is peculiarly favourable to the operation of the ligature; and as it has not yet deſtroyed the bones, the operation is almoſt always ſucceſsful. I like to be diffuſe in my deſcriptions and character of diſeaſes: in my directions for operating, I at leaſt wiſh to be perſpicuous and conciſe. You would imagine the apparatus for applying the nooſe round a polypus to be multifarious and complicated; you would at leaſt imagine the tubes and other inſtruments of Levret, to be eſſentially neceſſary, and cannot perhaps at this moment imagine that any contrivances but what were extremely ingenious, could be at all ſucceſsful: it is quite otherwiſe: I have often tried thoſe much reputed inſtruments, with perfect confidence in them, and uniformly, I concluded with my fingers, the operation which I had tried in vain to perform with this apparatus. The operation I am going to deſcribe re-

quires addreſs and courage, but no inſtrument great or ſmall: indeed the inſtruments are ſo deſcribed, that I am perſuaded thoſe who write in praiſe of them never uſe them. I require nothing but a piece of fine ſilver-wire, and my fingers: I have frequently uſed cat-gut, but always found it ſoften, untwiſt, and become altogether unmanageable. Ligatures of wetted thread are quite flaccid, and difficult to apply: a ſilver-wire, of the ſize of a common harpſichord wire, paſſes eaſily through the noſtril, preſerves its looped form in the throat, is eaſily caſt round the polypus, and eaſily twiſted, in a gentle degree, ſo as to kill without cutting it.

First. *How to paſs the wire through the noſtril to the throat.* You have already felt the tumor depreſſing the palate, and eſtimated its ſize: you have repeatedly placed the patient before you, and made him open his throat, and depreſſed his tongue, ſo as to occaſion ſtraining and retching, which unfolds all the parts, and ſhews you their ſize and relations: you now place him before you oppoſite to a light, ſupported by aſſiſtants, reſolute to bear whatever you do, and reconciled to it by ſeeing that you have only a piece of ſilver-wire in your hand. You take the piece of wire, about three feet long, double it, and ſmooth and arrange the doubled part, by preſſing and modelling it in your fingers into a neat nooſe, (No. 20.) a little open and ready to expand when it gets into the throat, but ſmall enough to paſs through the noſtril; and taking this loop betwixt your fore-finger and thumb, you enter it into the noſtril, and puſh it gently along. However big the polypus, you find that the loop of ſilver-wire glides eaſily and ſmoothly along; find it ſometimes ſtopped, and then it bends and reſiſts, but withdraw it a little, and then puſh it, and it will go on. I have never found occaſion to uſe any inſtrument for conveying the loop to the throat, except when the bones were deſtroyed; a caſe in which I can hardly counſel you to attempt the cure. I have thus imagined, that the wire was turned aſide into the antrum Highmorianum, and have uſed a catheter, cut or open at the point as a canula, for paſſing the wire in the manner repreſented (No. 21,) and then puſhed on the wire in the direction of the dotted line (c), till it could be ſeen and catched in the throat, and then withdrawn the catheter

Second. *How to hook out the wire from the throat.* You cannot be one moment at a loſs to know, when the wire reaches the throat; for while it paſſes along the noſtril, it excites not even ſneezing or watering of the eyes; but the moment it paſſes the uvula, or touches either on one ſide the tonſils (a a), or the back of the pharynx (b b No. 22), it excites a ſenſe of ſuffocation, and a deſire to cough, with ſneezing,



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which the patient cannot a moment reſtrain. Upon looking down into the throat, the loop of the wire is ſeen in the direction (c), it is eaſily hooked out by the blunt hook (No. 23,) or catched with common dreſſing forceps, or a bended probe (No. 24.) Then quickly puſh the wire onwards through the noſtril with the finger and thumb of the left hand, hook it forwards through the mouth with the crooked fore-fingers of the right hand, and as ſoon as you have got the loop without the lips, all is quiet again; yet in all caſes the hooking it thus is a painful ſtruggle, though in the hands of a dextrous ſurgeon, a momentary one. Often you will find the loop of your wire paſſing actually down into the glottis; the patient inſtantly cries, coughs, and ſtrains violently, while the face becomes turgid, and the eyes ſtand in tears: inſtantly, knowing what kind of an accident has happened, you withdraw the wire a little towards the noſtril; by this motion you retract it from within the glottis, and you keep it carefully there till the ſtraining ceaſes; then you puſh it gently on again, keeping the mouth open, and catching the wire the moment it appears behind the tonſils. In this part of the operation, there is much addreſs and ſome practice requiſite; firſt, in ſtealing the wire on ſo gently that the patient ſcarcely feels it; ſecond, in diving keenly and reſolutely with the finger into the fauces, the moment the wire begins to excite the throat, or becomes viſible behind the velum: and laſtly, in quieting and compoſing the patient for the next part of the operation, viz. that of caſting the nooſe.

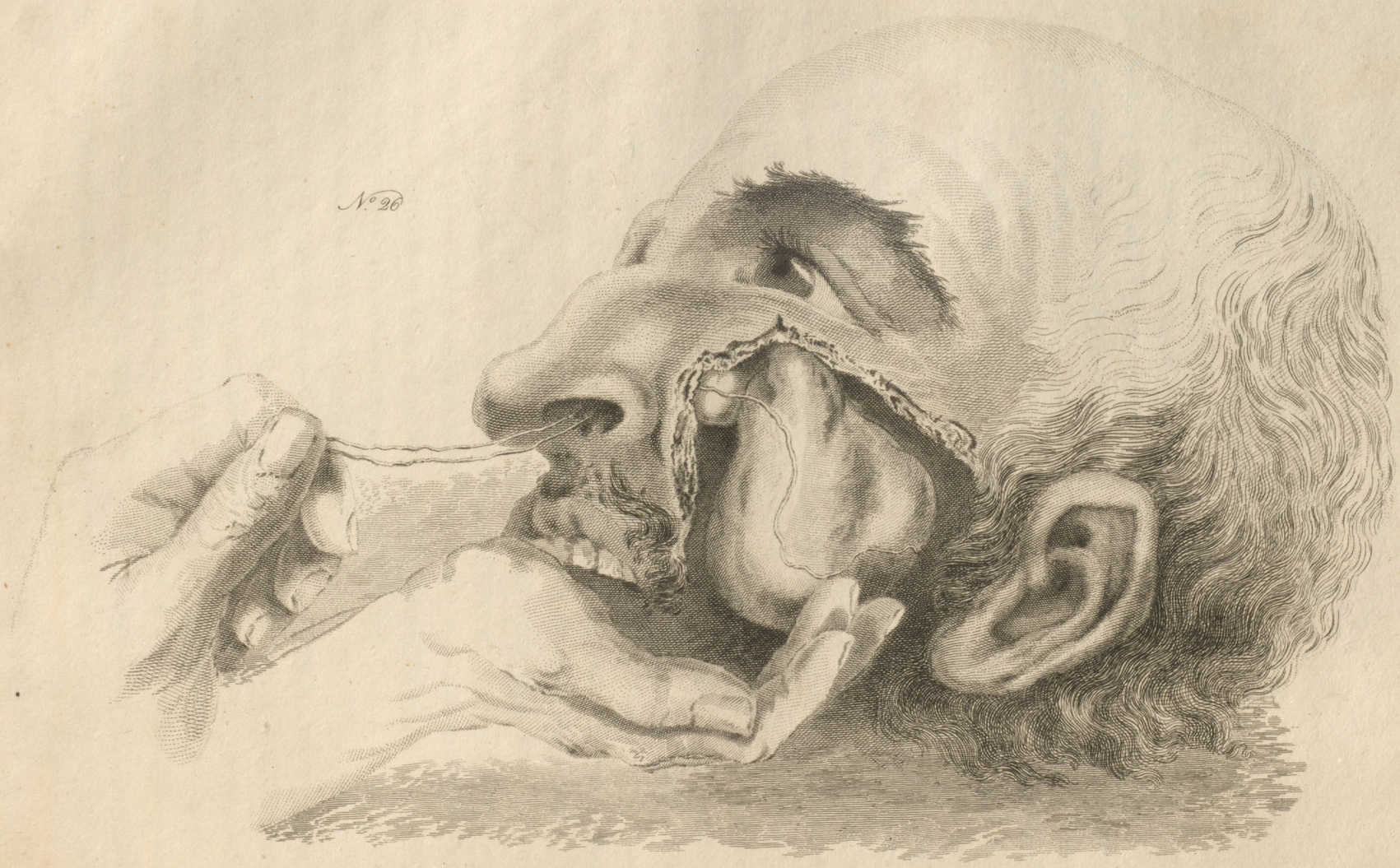
THIRD. *Of ſpreading the loop of the wire, and caſting the loop over the polypus.* You now draw out the loop of wire entirely from the mouth, and ſpread it wide; you prepare to re-act with the right hand, in favour of the left; you take the two ends of the wire which project from the noſtril firm in the left hand, twiſting it round the fingers for a ſurer hold; you gather the fingers of the right hand together with the thumb, ſo as to form a cone, and taking the loop of the wire upon the conical fingers, you, by drawing the wire up towards the noſtrils, tighten the loop ſo upon the fingers, that it is not eaſily diſplaced in the next ſtep of the operation: you now prepare for that effort, by which you are to carry the loop over the biggeſt, and moſt pendulous part of the tumor; and in this effort you are to ſucceed at once, or to fail; it can laſt but for a moment: the patient, while you make this effort, cannot breathe, he feels the ſevere preſſure of your fingers in his throat, he is ſuffocating, ſtruggling at once for breath, and ſtriving to vomit; his eyes are ſtaring, and his viſage inflated: you dare not keep him one moment in this condition; you muſt act reſolutely and dextrouſly. Your purpoſe is to

puſh the ligature home over the bulk and body of the tumor with the right hand, while with the left you draw the ligature backwards towards the noſe: you firſt allow the patient time to take breath, and be compoſed; you let him fairly underſtand what you deſign to do, and how: you prepare yourſelf by making the wire tenſe, by pulling with the left hand, and fix the loop by ſpreading and diſtending a little the conical fingers of the right: you then, in one moment, retract the ligature ſteadily but ſpeedily with the left hand, while you plunge the loop into the mouth, and carry it quite to the back of the throat with the right. The tumor, which in your previous examinations you were able only to touch with the points of your fingers, you are now, in the moment of operation, uſing every degree of violence, and puſhing your hand boldly and deeper into the throat, able to grapple with, and by hooking and grappling with the points of your fingers, you get it in ſome degree within your graſp; and pulling the bulk of the tumor towards you, with the crooked points of your fingers, and hitching off the ligature from the points of your fingers by bending them ſtill more *, you at once turn it over the lower part of the tumor with the right hand, and pull the nooſe up towards the root of the tumor with the left.

FOURTH. *How to hitch up the ligature cloſe to the root.* With every operator this muſt be a matter of great anxiety, for he has no ſign nor mark by which to know, that the loop is carried to the higheſt poſſible point, nor any ſure means of doing ſo. Do not let me deceive you, by repreſenting the ſimple methods I am going to ſpeak of as infallible; ſo much the reverſe, that though they ſeem to me at once the beſt and the moſt ſimple; though I have always entered upon this part of the operation with confidence, I have never finiſhed without a degree of diffidence and uncertainty.

I have often found, eſpecially in firm and ſmooth polypi, that I have by that quick and forcible retraction of the ligature, by which I draw it up behind the polypus, hitched it at once ſo high, that no after operation was either neceſſary or uſeful. But the attempt to hitch the ligature high, and place it correctly

* No. 26, where the poſture of the hand, ligature, and tumor is marked (a a). The ſpongy bones (b), one anterior branch of the tumor (c), the bulk of the tumor (d), its root (e), its moſt pendulous, and uſually its moſt globular part, that, viz. which depreſſes the ſoft palate (f); the crooked fingers, in the act of paſſing the nooſe over this round part of the tumor (g); the nooſe now ſlipping over the tumor, to be retracted violently by the noſe, the moment it is felt, to be beyond the bulky part: the puſhing on of the nooſe, and the drawing of it up, being motions performed in one moment.



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round the neck of the tumor, can never be ſuperfluous: the inſtrument I moſt frequently uſe is the catheter, repreſented in (No. 21.): but in the manner repreſented in (No. 25,) it is a boy's catheter, or one of the ſmalleſt ſize, cut acroſs about the middle, or ſomewhat ſhort of the middle of its curve. Taking one of the ends of the wire as it hangs out of the noſtril, I paſs it through the tube of the catheter, and then holding both ends of the wire or nooſe firm, I paſs the catheter deep into the noſtril, along the wire, till I imagine the point of the catheter touches the tumor; then, by tightening both ends of the wire, and turning the point of the catheter upwards, I try to raiſe that ſide of the wire or ligature as high as poſſible; I then withdraw the catheter, paſs the oppoſite ſide of the wire through it; I hold all tight again, and try to raiſe that ſide of the nooſe as high as poſſible; I then paſs both wires through the tube of the catheter at once, puſh the catheter along till it touches the tumor, pull both ends of the ligature ſo as to tighten it round the neck or ſmaller part of the polypus, and, twiſting the wire faſt round the handle of the catheter, I leave it there. More frequently I uſe for this latter purpoſe a ſhorter tube, or very ſmall ſection of a catheter, a little bended, ſuch as is repreſented, (No. 27,) which, when fixed, projects no more than an inch, or an inch and a half beyond the noſtril, and is leſs apt to be diſcompoſed by accidents during the day, or change of poſture while the patient lies aſleep. Sometimes I have run along the line of the ligature to hitch it higher, a probe with the point bent into the form repreſented, (No. 28.) Sometimes, giving the loop a twiſt in its middle, I have, before introducing through the noſtril into the throat, tied a ligature of waxed thread, or catgut, as repreſented, (No. 29,) where (a) repreſents the ligature of wire, (b) the twiſt of that wire which keeps the *regulating ligature in the center*, (c) the ligature of waxed thread, or catgut, which is to raiſe the proper ligature and adjuſt its place. When a ligature of wire is thus mounted and introduced into the noſe, and the loop caught in the throat, and retracted through the mouth, this aſſiſtant ligature is fixed on the center of it; the nooſe of wire is then carried into the throat upon the conical fingers of the right hand, and caſt over the tumor, and retracted behind it as I have already explained, and of the three ends hanging out of the noſtril, you raiſe, firſt this ſupplementary ligature, by running the catheter along it, and thus you make ſure of hitching the center of the loop of ſilver wire higher, after which you carry each of the ſides higher, by running the tube along them; and if you know the windings of the paſſages, and have formed a true conception of the form of the polypus you have to deal with, your chance is tolerable

of placing the ligature very true. If there be a ſecond polypus, one in the noſtril as well as one in the throat, this method enables you to carry the ſame ligature at once round both. I have occaſionally done this with the common-eyed probe, (No. 38 ;) but the eyed-end of the probe, though from its flatneſs it glides pretty well along the ſides of the tumor, is too big to turn eaſily, and too ſharp in its point (a), but a ſurgeon in the country may, by clipping off the point with ſciſſars, and hammering and rounding it upon a ſtone, fit it for this uſe. I have occaſionally uſed for this purpoſe a piece of ſtiffer wire twiſted into a loop, as repreſented in (No. 31,) where (a) repreſents the thicker and ſtronger wire for conducting the ligature down into the throat, or placing it correctly, and hitching it high upon the neck of the polypus ; while (b) repreſents the ſmaller, and more flexible wire, that is to ſerve for the nooſe. In performing this operation then I take only a catheter nicely cut and ſmoothed, a few waxed ligatures and catguts of various dimenſions, ſmall and flexible wire, for forming the nooſe, and thicker and firmer braſs wire to uſe for this purpoſe, with cutting pliers, and common pincers, to turn and twiſt the wires into whatever ſhapes beſt ſuit the occaſion, or the accidents of the caſe *.

FIFTHLY, *Of the effects of the ligature on the tumor, and of the time of its ſeparation.* When you firſt draw the nooſe, the ſtricture is followed with extreme pain, the eyes fill with water, the patient cries out and retracts his head, and violent ſneezing follows ; during the whole of the firſt and ſecond day, the pain is like that of ſevere tooth-ach, and, upon tapping with the finger upon the catheter or probe, you find it firm. On the third day, a thin and bloody ſerum begins to diſtil from the nooſe, and continues to flow in great profuſion, the probe or catheter is blackened by the putrid taint of this ſerum, the polypus, if any part of it project ſo as to be felt, is perceived to be flaccid, the breath begins to paſs through the noſtril, and the patient, who had felt his fauces choaked with the polypus, and was deaf from its preſſure, now ſwallows eaſily, and hears very acutely, becauſe the tumor begins to ſhrink.

Theſe are the firſt auſpicious ſigns of the fading of the polypus : the fœtor of the matter increaſes on the fourth and fifth days, the probes and ſilver wire are ſtill more blackened, the wire manifeſtly has become looſer from the ſhrinking of the

* I have found particular advantage in uſing ſuch as is repreſented in (No. 23,) for this purpoſe,—a ſteel wire mounted on a handle, and ſo curved, that I could turn it eaſily, and know which way I turned it.

tumor, the catheter now ſhakes from ſide to ſide, and, that it may completely deſtroy the polypus, you find it neceſſary to draw it a little cloſer in proportion as the tumor has already yielded. Not unfrequently it happens, that at this time the probe or catheter comes eaſily away, and the loop of the ligature appears of the form and ſize, repreſented in (No. 27,) at (a): but if the ligature continue to retain its hold, it is but for a day, or at the utmoſt two days longer; and though the pain is not renewed, the polypus, being now leſs ſenſible, the parts are ſtill more blackened, the diſcharge is extremely fœtid, thin, and copious; ſome blood uſually flows at this time, the ſwallowing improves, and the hearing grows too acute, irregular, and confuſed; the tube falls away on the ſixth, ſeventh, or eighth day, and often it happens, that the tumor melts away ſo entirely, and is reſolved into this gangrenous ichor, that no perceptible portion of it falls away: ſometimes, continuing more entire, it drops into the throat, and the patient rejects it; often when it drops into the æſophagus it is ſwallowed, and is paſſed indigeſted by ſtool; ſometimes the patient is conſcious of having ſwallowed the tumor, but more uſually it paſſes over the throat inſenſibly, and during ſleep. I have known it happen, eſpecially in the hands of ignorant people, that, after the polypus has dropped off, and actually been paſſed by ſtool, the tube and wire have kept their place, without the reaſon being at all ſuſpected: it is this, that the loop of the ligature (a, No. 27.) is larger than that narrow ſlit of the noſtril, through which it ſhould paſs, and thus it hangs ſuſpended, and I have known it hang ſo a month, but looſe, moveable, and eaſily taken away. I do not know that the loop of wire ever needs be left, even in the moſt bulky and cartilaginous polypus, beyond the eighth day.—Allow me to detain you a moment to confirm this fact by an anecdote in ſurgery. I had pretty publicly affirmed, in lecture and in converſation, that this was at once an effectual, and eaſy way of nooſing a polypus, and that no man of common dexterity could fail to perform it.—A Gentleman who had as publicly tried, in a well-grown lad, to nooſe a polypus after this manner, challenged me to make good my word by applying the nooſe; this I was charitable enough to do, not in the public operation room, but in a ſide room, puſhing the ligature boldly with the fingers of the right hand, and retracting it into the back of the noſtril at the ſame moment with the left, fixed it round the tumor at once, and tightened it by running the wires through the tube. Having done this part of my duty, and proved by the firmneſs of the tube, that the tumor was well and effectually nooſed, I never imagined it neceſſary to inſtruct an hoſpital-ſurgeon how or when to remove the wire: he had

tugged in vain at it the firſt three days, and then formed the ſage reſolution, of leaving it to drop away of its own accord. Little did I imagine I was ever to ſee the lad again, when one day about two months after, in walking idly the rounds of the hoſpital, I ſaw this lad with his face wrapped up, and the tube projecting from his noſe, through a quantity of foul dreſſings: I could not but inquire how his polypus had returned ſo ſuddenly, and who had introduced the wire a ſecond time, when, to my ſurpriſe, I learnt, that the wire I had applied, had neither been removed, nor dropped away; upon removing the foul and fœtid plaſters, and dreſſings, which were bound round his face, I found that the wires had been drawn ſo tight againſt the wing of the noſe, and bound ſo firm by adheſive plaſters, that the ala naſi was ſlit up its whole length, fairly as ever a ſow's was by the ring: this long cut was healed, the wire held by this ſlit alone, for the tube was looſe, and the polypus gone.

Theſe are, I believe, the moſt material rules and directions I have to give you; but there are ſome of them, perhaps, that I ought to explain or to impreſs. The operation which uſe has made eaſy, or frequent ſucceſs has inclined us to prefer to all others, we are apt to praiſe too much; but I am conſcious, that it is a ſerious duty to repreſent this not favourably but truly. The operation of nooſing a polypus, is not ſuited in any degree, to theſe ſmall and ſoft polypi, which occupy only the noſe; but to thoſe big and ſolid ones, which depreſs the palate, and are felt in the throat. It is moſt natural for the young ſurgeon to believe a polypus the more formidable, the greater its ſize; but indeed it is impoſſible to grapple with thoſe which are not large; thoſe are moſt eaſily grappled with the points of the fingers, and nooſed with the loop or ligature, which are very conſpicuouſly large.

Some apparatus you will aſſuredly require; you would imagine many and curious inſtruments neceſſary; you muſt have ſmall catheters or other tubes, you muſt have a blunt hook for hooking the nooſe forwards, as ſoon as it appears in the throat, a pair of common dreſſing forceps, which indeed I find beſt, ſilver wire of various thickneſs, and pliers for twiſting, and cutting forceps, or ſtrong ſciſſars, for dividing it; but having had much experience in ſuch operations, and ſeen every variety of the diſeaſe, I proteſt I know of no circumſtances in which I would not prefer a bit of ſilver wire managed with my fingers, and paſſed down into the throat, without a tube, drawn out with dreſſing forceps from the throat, formed into a loop, and thruſt over the tumor with my three firſt fingers of the right hand, in a conical form, to the moſt ingenious inſtruments that ever were deviſed.

An operation ſo effectual and radical, and yet ſo little alarming, I do not know; for the ſurgeon preſents himſelf without inſtruments, with only a bit of ſilver wire in his hand, and with the profeſſed intention too, not of cutting, tearing, or cauterizing, but merely of caſting a nooſe round the tumor, as round a wart on the ſurface of the ſkin. Nor are the efforts made in applying that nooſe, though violent, at all dangerous; they are not fatal like thoſe of an unſkilful ſurgeon groping in the lacerated bladder for a ſtone; there is here no inciſion, and the ſurgeon is grappling for a hold of an uninflamed tumor, in natural paſſages, which, though they be inflamed by his unſkilfulneſs or rudeneſs, (and I have ſeen them inflamed ſo that the whole throat has ſwelled exceedingly,) yet ſuch inflammation does no material harm.

But, though harmleſs, the efforts neceſſary for nooſing the polypus makes it a moment of great agitation, and anxiety for the ſurgeon: his patient ſtrains, and ſuffocates, during his attempt; however long it laſts, breathing is ſuſpended; the eyes are filled with water, the blood guſhes from the mouth and noſtrils, the fingers, or rather the hand of the operator, is driven deep into the throat; and the patient is held ſtaring, and ſtruggling, at once terrified for ſuffocation, excited to vomit, and alarmed and pained by the puſhing of the operator, who is obliged to puſh his finger deep, before he even feels the tumor behind the palate, who grapples hard before he gets the lower part of it within the graſp of the fingers, and puſhes ſtill more violently, and ſtruggles much, before he can paſs the loop of the wire beyond and over it: it is a painful, and to the ſpectators an apparently deſperate and unavailing ſtruggle: it is difficult to perform in the living ſubject, for in one moment of violent ſtruggling a thing is to be accompliſhed, which you have no opportunity of trying previouſly in the dead body: it is alſo to be accompliſhed at once, for if the operator ſuffers himſelf to be once foiled, he may be ſo fifty times, and never ſucceed: never, therefore, attempt this operation in the preſence of ſtudents, nor think of it as an exhibition of ſkill, but privately, with one or two choſen friends, when having no concern about your own reputation, or ſhame or fear of being foiled, your whole thoughts are occupied with your patient.

Like the operations of midwifery, ſuch as turning the child, or dilating the womb in floodings, this requires a degree of ſtrength, and a ſort of cruel violence, which the inexperienced ſurgeon cannot allow himſelf to uſe, inſomuch, that one who has often performed it, forgets that there is any ſkill required, and knows not how to deſcribe the art he does uſe. So great is the force, that I long imagined

that nothing but courage was neceſſary; I was not aware, that in a matter ſo ſimple, there was occaſion for particular addreſs; and among many, whom I have ſeen try in vain to nooſe a polypus, I repreſented to one gentleman, that he had but to puſh his fingers more courageouſly into the throat, and he could not fail to diſtinguiſh the polypus, and after a ſhort ſtruggle to nooſe it; this was the only point of my inſtructions in which he did not fail. More deſperate ſtruggles, I confeſs, I never witneſſed; and, when after twenty attempts, I perceived that it was impoſſible he ſhould ſucceed, I found it as difficult to diſengage him from the patient as a maſtiff; from his hold, he ſeemed furiouſly reſolved not to be defeated in what was eſteemed eaſy, and neceſſary for the patient, nor diſgraced before a whole theatre of ſtudents.

The ſurgeon muſt in performing this part of his operation, be prepared to uſe great force: he firſt draws out the loop from the throat, then ſpreads it, then paſſes the three firſt fingers of his right hand in a conical form into the loop, then retracts the wire in the noſtrils with the left hand, ſo as to ſtraiten the loop upon the fingers of the right hand, that it may not ſhift, then pulling back the wire with the left hand, he gradually introduces the right hand into the mouth, conducting the loop upon the points of his fingers. He next prepares for the final exertion, by pulling the ligature ſmartly with the left hand, thruſting the right hand forwards into the throat, diſtending the mouth more and more, and puſhing the hand deeper, till he not only feels the tumor, but paſſes beyond it with the points of his fingers, hooks it towards him with the crooked finger-points, as in the motion of tickling, puſhing the ligatures up with the backs of the fingers at the ſame moment, and pulling it very ſtrongly back into the noſe; the throat all the while re-acts and aſſiſts him. This, as far as I am conſcious, is the manner in which I have ſucceſsfully nooſed the polypus, wherever I conceived it to be of ſufficient ſize for ſuch an operation; I have never yet failed, and that I may explain this method perfectly to you, I ſhall add a few plans taken in the moment of operating *.

* It is eaſy to imagine the manner, and ſtill eaſier to underſtand the effect of theſe manœuvres, but to execute them extremely difficult; ſo I am now perſuaded, both by experience and by authority. I have ſeen ſurgeons, by no means aukward or ignorant, miſcarry moſt inexplicably in this ſimple operation of applying the nooſe, and I find, that the beſt modern ſurgeon in France has often remarked this, and expreſſes it in the following terms:—" On attache un long fil à cette anſe qui eſt dans le fond de la bouche, et l'on tâche de l'engager autour du polype, afin qu'elle puiſſe l'embraſſer le plus hant qu'il est poſſible. Si l'on manque ſon coup, on retire l'anſe à l'aide du fil et l'on recommence l'operation. Si l'on réuſſit à faire paſſer le polype dans cette anſe, on en tire à ſoi les chefs ou les fils qui ſortent par le nez,

Hiſtory of the Diſeaſe.

" The caſe of A. Gow is one, I believe, particularly ſuited to convey clear impreſſions of this ſecond ſtage of the diſeaſe, in which the tumor is bulky, fit for the application of the nooſe, and not yet accompanied with any caries of the bones. Gow is a hard-working young man of twenty-one years of age, apprentice to a mill-wright in Blair Athol; his polypus is big, and of a ſtony hardneſs; it choakes the fauces, as if a fiſt with its knuckles downwards were thruſt into the throat; the chief bulk of the tumor deſcending from the back of the noſtrils, puſhes out the ſoft palate into a great convexity, ſo that it preſſes the root of the tongue; two large knuckle-like tubercles of the polypus project below the curtain or moveable palate, and on the center of the convexity formed by the protruded ſoft palate, are two long gaſhes of inciſion, made apparently with the expectation of letting out matter by his country ſurgeon, and now in ſuppuration. There is no part of the polypus projecting from the noſtril, the bulk of the tumor is in the fauces, yet the face is deformed, the noſe being inclined to one ſide, as if a branch of the polypus were lodged there. There have been frequent and very profuſe hemorrhages; the parts within the noſe are greatly endangered by the preſſure, which is attended with conſiderable pain; but as yet, no matter diſtils from the noſtrils or throat, there have been no intenſe pains in the cheek, the maxillary and naſal bones ſeem firm and ſound, the diſeaſe is advanced to the fartheſt verge of the ſecond ſtage, and beginning of the third, in which the bones and Schneiderian membrane fall into incurable ulceration: nothing has ſaved the patient from ſuch caries, but that the tumor, though very bulky, is but of recent growth; it is of ſuch a ſize as to be extremely favourable for operation: before applying the nooſe, I take the following notes of its progreſs.

" The lower order of people are coarſe and hardy, very little attentive to their health; it is not a ſlight alteration of the voice, ſlight obſtruction of the noſe, or occaſional hemorrhages, that can alarm them; thence it happens, that the date they aſſign for ſuch a tumor, is not the beginning of its growth, but that ſtage of its progreſs in which it occaſions particular diſtreſs. It is no more than ſix months

afin de ſerrer le nœud le plus qu'on peut: mais j'ai encore vu ceux qui préconiſoient ce procédé ne pouvoir le mettre à exécution, malgré tout le deſir qu'ils avoient de faire voir leur dextérité. De quelque manière qu'on agiſſe, le malade éprouve des nauſées fatigantes, un chatouillement déſagréable par l'impreſſion que font les doigts ou les inſtrumens ſur l'arrière bouche.

ſince Gow ſuſpected any thing to be wrong in his throat or noſtril; he had tooth-ach, and had a tooth pulled, without any poſſible relation to his preſent ailment, the firſt ſenſible ſign of which was hemorrhagy from the noſe: during eight or ten days, he ſeldom roſe in the morning without violent hemorrhagy, which ſometimes recurred during the day, or in the evening, but it ceaſed ſpontaneouſly.

" About a month after this firſt attack, the occaſional hemorrhagy returned in all its violence; he bled profuſely from the noſe, not only in the morning, but at all hours of the day and night; all the uſual methods of reſtraining it now failed, he fell into extreme weakneſs; and, to uſe his own homely expreſſion, " ſeemed to have bled out all the blood of his body."

" One day when he was out in the duke's woods with his maſter, the mill-wright, cutting wood for their work, he obſerved, in blowing his noſe, that he could not blow with his right noſtril; he felt, at the ſame time, ſomething uneaſy in his throat, and directed by this feeling, puſhed his finger as far back as it could go, and then he plainly felt a ſoft lump, obſtructing hi throat, and hindering his free breathing; and being greatly alarmed, he begged his maſter to look into his throat, who ſaw the lump very plainly. Thus you perceive in this coarſe country lad, little in the habit of obſerving his own feelings, and not eaſily diſcompoſed by trifling uneaſineſs or diſeaſes, which in a more delicate perſon, and in a higher rank in life, would have cauſed great alarm. The polypus was not obſerved, till after it had occaſioned very profuſe hemorrhages, and had grown to a very remarkable ſize.

" The tumor increaſed rapidly; it was the difficulty of breathing, and uneaſy feeling in the throat, that firſt led him to the diſcovery; and being ſenſible that the lump in his throat was ſtill growing, and feeling his right noſtril particularly ſtuffed, he introduced his finger there, from time to time, and was ſenſible alſo of a ſmaller lump obſtructing his noſe.

" At this period when he had difficulty of breathing, with a total obſtruction of the right noſtril, difficulty of ſwallowing, with a degree of deafneſs in the right ear, he had no diſtinct tooth-ach, but a general uneaſineſs, ſenſe of preſſure, and confuſed pain in the head: but he had no returns of the hemorrhage, and only a thick, white, and ſtarchy-like mucus, a mere increaſe of the natural ſecretion diſtilled from the noſe.

" In this ſtage of the diſeaſe it was, that he firſt applied to a ſurgeon, a very ignorant one, who performed a ſingular operation, the inciſions which he made are

ſtill in a ſtate of ſuppuration. The lad went to this ſurgeon to complain of difficulty of breathing, and a lump growing in the throat, which he could not eaſily ſee and feel. The ſurgeon having heard of ſwellings of the tonſils, and obſtructions of the throat, and read perhaps of the operation of ſcarifying the tonſils, to let out the matter, knowing nothing of diſeaſes, and apprehending that the tumour he ſaw could be nothing but the ſwelled tonſils, he proceeded to make two long and deep inciſions. This bulky and firm polypus, having puſhed down the velum, had depreſſed it to a right angle with the palate; and the ſoft velum, with its uvula, was thus protruded forwards in the mouth, in the form of a tumor, ſo far, that you could eaſily touch it with the finger. He perhaps imagined it ſome great abſceſs of the tonſil: he made, with what inſtrument I know not, two long inciſions, each more than an inch long, parallel with each other, down through the very center of the velum; and the ſame preſſure which thus extended the velum continuing and increaſing, has ſo dilated the two inciſions, as to prevent them healing: they are to this day in a ſtate of ſuppuration, with red and hardened edges, though it is full two months ſince they were made.

"The ſurgeon ſaid he would come back and complete this operation; what he deſigned next to do it is difficult to conjecture; but fortunately for Alexander Gow, the operator, while meditating upon the operation, died, probably from ſolacing himſelf after hard rides with too ſtrong a cup; and ſoon after his death, Gow came to town to have ſome operation performed."

Notes of the Opinion in this Caſe of Gow.

"The tumor is big, diſtinctly felt behind the velum pendulum, eaſily grappled with and nooſed: the ſtage of the diſeaſe is urgent, the pain, deafneſs, ſtupor, and affection of the voice, ſhew the preſſure to be ſuch that we cannot for one moment reckon upon the part continuing ſound, the operation ſhould be immediately performed."

In performing this operation, I have made four ſeveral plans, explaining its ſize, place, and effects in depreſſing the palate. Figure 1 ſhews the mouth widely opened, and the tongue and the palate only are ſeen; (a) the tongue depreſſed by the patient's own effort, (b) the ſoft palate depreſſed by the tumour above and behind it, (c c) are the two inciſions practiſed by this notable ſurgeon, both gaping from the preſſure of the polypus behind them, each a full inch in length, and in full ſuppuration. In this view, the polypus itſelf is concealed by the root of the tongue.

Figure 2 ſhews the mouth in nearly the ſame view, the head only a little more elevated, ſo that we ſee deeper into the throat, almoſt to the epiglottis, at leaſt when the patient ſtrains and retches, and the tongue is held down with a ſpoon; (a a) marks the whole length of the velum, actually depreſſed to a right angle with the bony palate; and (b b) two big glandular-like knobs, by which the form of the lower part of the polypus is determined, and which give the polypus an appearance of having its origin equally from both noſtrils; from this view indeed, you could not even gueſs, that it were ſeated entirely in the right.

Figure 3 repreſents the ſide of the mouth retracted, the tongue protruded, the polypus ſeen more in profile, whence you can perceive more clearly, that the ſoft palate (a a) is depreſſed exactly to right angles with the hard or bony palate; that the polypus double-headed, and very livid and dark coloured, projects from behind the velum, and hangs very low; and this lateral view prepares you better for aſſimilating theſe actual ſketches of the tumor, with the plan figure 4.

Figure 4 is merely deſigned to ſhew you, while the polypus is thus felt in the throat, how it probably lies within the noſtril, how its pedicle, or ſtalk is expoſed to the operation of the ligature, how it may be reached with the fingers paſſed into the mouth.

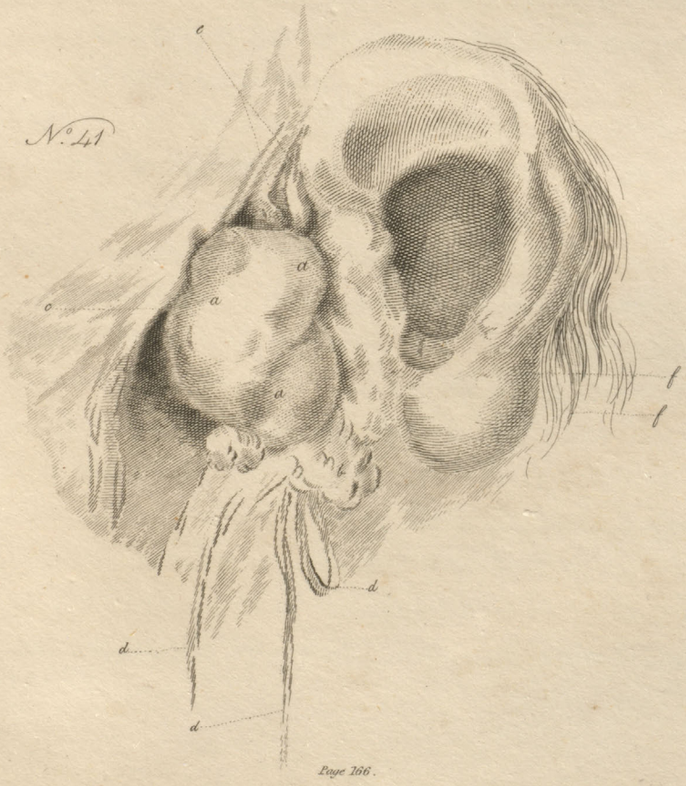
Figure 5 is a true drawing of this polypus which I found of this ſize, exceedingly hard and cartilaginous, and ſo firm, that a delicate knife might be broken on it, before it could be divided. Such is the tumor, which would in former times have been cut out, or torn imperfectly away, after cleaving the palate, not partially, as was done by the Dunkeld ſurgeon, but entirely. I extirpated this polypus with a nooſe of ſilver wire, after the uſual ſevere ſtruggle in paſſing and adjuſting the nooſe; whether the point (a) be that ſmall projection which was felt deep within the noſtril, I do not know; but the broad ſurface (b), which either implied that this polypus had not a narrow pedicle, or that the ligature had not been fortunately placed, alarmed me. I was long without tidings of this young man, and feared leſt he had been cut off by a return of the diſeaſe; but juſt now, at the diſtance of eight years from this operation, I have recogniſed him a waiter in a tavern, and in ſtrong health, and grown a ſtout and athletic man.

The plan, Figure 6, is that of a polypus, which is juſt within the limits which I would preſcribe, as admitting the operation of the nooſe: A. B. a fine healthy boy of about 14 years of age, tall for his time of life, and with a fine ingenuous countenance, preſented himſelf with a polypus viſible in the noſe, and juſt tangible

Fig 6



N°. 41



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Drawn by J. Bell.

Engraved by E. Mitchell.

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in the throat behind the palate: it was of a ſize and condition very propitious to the operation; not yet accompanied with pain, nor hemorrhagy, nor fœtor of the breath, nor matter indicating caries of the bones; and yet ſo firm in its conſiſtence as to bear the ligature; and ſo large as to come within the graſp. His voice is completely changed, his breathing quite obſtructed, his hearing much affected, but the face is ſo very ſlightly diſtorted, that you can hardly ſay which ſide of the noſe is bigger, the chief bulk of the polypus going backwards into the fauces: every thing, in ſhort, is ſo favourable to operation, that I am at little pains to inquire where it began, or what he ſuffers; indeed what is ſuffered by a boy of this unreflecting age, unleſs there be actual pain, is very ſlight.

The plan which I have ſketched of this tumor, expreſſes whatever I could wiſh you to remember: the tumor was like all thoſe which deſcend into the fauces, not only firm, but of a cartilaginous hardneſs, and knuckley form. The anterior polypus (a) projecting from the noſtril is juſt viſible, is very firm, is like the point of a finger in reſpect of ſize and form, and is little moveable. The body, or chief bulk of the tumor (b), paſſes backwards into the fauces, does not depreſs the velum, or very ſlightly, does not at all times appear below the edge of the ſoft palate, it becomes viſible only in the moment of depreſſing the back of the tongue ſtrongly, for then the gorge riſes, the patient ſtrains to vomit, the ſoft palate is conſtricted and retracted; and the lower or bulbous part of the polypus appears; but it is diſtinctly felt by puſhing the fingers into the throat, and when we grapple it, it feels of a ſtony hardneſs and quite unyielding.

I applied the ligature with the uſual painful ſtruggle, but the boy bore it well: the tube for tightening the ligature ſtood very firm: he was, on the 4th day, relieved of the tube and ligature, which dropt away; and at the ſame time, of his deafneſs and ſtupor, recovering with all his natural voice. But, though I have nooſed many polypi ſucceſsfully, in this I certainly failed; I imagined I had nooſed both polypi effectually, for both dropt away, and he was conſcious one night of ſwallowing that one which choaked the fauces; but either the polypus projecting forwards into the noſtril, had in part eſcaped; or, from the ligature embracing both, they had been imperfectly compreſſed; or there had lurked behind them a third polypus, which indeed I conceive to be the moſt likely conjecture; but the diſeaſe actually returned, in a few months he came back to me with the voice as much affected, and the guttural part of the polypus as bulky as at firſt. Though mortified, I was not diſcouraged by my ill ſucceſs, but addreſſed myſelf again to

the buſineſs, and nooſed this new tumor, taking every precaution to carry the ligature quite up to the root, and I am confident this boy was, by this ſecond operation, perfectly cured, I ſaw him grow a fine ſtout young man, and I muſt have been his ſole reſource had the diſeaſe returned a third time, for the operation was bloodleſs, not at all alarming, and little painful, and his relief perfect. You will obſerve, that I have extracted this plan as it is ſketched in my caſe-book, with one root to both tumors, repreſenting them as connected by one common ſtalk, or pedicle: I have ſince changed my opinion on this ſubject, and am perſuaded that, wherever there are two or more polypi, they are diſtinct in their roots, as in their bodies. This was juſt Gow's polypus in embryo, and I ſpeak of it to you as an example of two polypi; and a warning of the unlooked-for diſappointments you will have to brook, if you are engaged in this line of practice.

Of the Third and laſt Stage of Polypus.

The laſt and fatal ſtage of this diſorder you will know even at ſight by ſtrong characteriſtic marks; by the humid half-cloſed eye, moving ſlowly and half drowned in water; by the ſnuffling voice, the total deafneſs, the ſtupor and languor, approaching to apoplectic, the diſtorted noſe, and pallid tranſparent wax-like face; while the looſe naſal bones, and puffy cheek, denote the incurable ſtage of the diſeaſe; the puffy integuments and ſoftened bones, and fœtid matter running from the noſe, prove that all you have it in your power to do by operation is to ſave the patient for a little while from dying of hemorrhagy.

"When firſt I viſited Mr. Cameron, his whole form and countenance and ſtate of ſuffering ſtruck me: he was a fine young man, about 25 years of age, tall, athletic, and had been noted for his ſtrength in all kinds of exerciſe and feats of ſtrength. His form was emaciated, his face deadly pale, with a ghaſtly tranſparency of ſkin, which gave his countenance the appearance of modelled wax, this proceeded from the frequent loſs of blood. There was a remarkable torpor and heavineſs in the eyes, which were half cloſed; for hemorrhagy brings on a languor and ſleepineſs which, in a caſe like this, is increaſed by an actual diſorder of the brain. His noſe was inclined much to one ſide, and his face greatly deformed, not merely by the riſing of the cheek-bone, and the dilatation of the noſtril, but from the ſwelling of the whole of the right ſide of the head, which ſeemed univerſally enlarged. The right eye was turned obliquely in its ſocket, and almoſt

cloſed; a large and maſſive branch of polypus projected from the right noſtril; and looking into the throat, I ſaw the ſoft palate preſſed forwards by a ſecond polypus as big as the fiſt; from continual pain of the caries, the tears ſtreamed unceaſingly down his cheek, ſo that he ſaw confuſedly; the ſaliva flowed continually from his mouth, and involuntarily, while a foul, black, and corroding ſanies, diſtilled from the noſtril, and excoriated and ſwelled the upper lip. He ſaid his head was continually tortured, as if ſqueezed from temple to temple in an iron vice. He ſat pale as a ſpectre, hanging over the fire, though in the hotteſt ſeaſon of the year, his knees almoſt touching the grate, reſting his head upon his hand, and waving it to and fro with continual agony, moaning and complaining. His viſage was pale, his lips bloodleſs, and every thing about him denoted deſpair, and the moſt perfect indifference about life. He was ſo deaf as to be inſenſible to the loudeſt noiſe; you could ſcarcely make him underſtand you, even when you hollowed in his ear; he was unconſcious when any one entered the room, or ſhut the door; his teeth were looſe on the affected ſide, and ſome had dropped from their ſockets; he was able to ſwallow liquids only, and, partly from this cauſe, but rather from deſpair, he refuſed all ſuſtenance, drank only water to ſlake his thirſt, and to every kind or encouraging expreſſion he always replied, 'He knew he could not be cured, he wiſhed he could die.'

"We cannot ſay whether ever in its earlier ſtage ſuch a diſeaſe could be cured; and it would be ungenerous to blame any profeſſional men who were not inhuman as well as unſkilful: but I really believe that this young man was loſt from the cool and cruel policy of one who made a trade of ſurgery. His ailments began about two years before that period in which he called my aſſiſtance; he came to town with a polypus occupying the fauces, affecting very greatly both the breathing and ſwallowing, and ſo large as to be diſtinctly felt in the throat, and put himſelf under the care of this Gentleman, who felt that indeciſion and averſion from engaging in the caſe, which every ſurgeon muſt feel who regards his own reputation as in danger of being involved in his patient's fate: he talked of operations, but propoſed none; ſpoke of various methods, but as doubtful and of very difficult choice; by beginning with this cruel and unprincipled policy, he, perhaps, imagined the patient's fate might be otherwiſe decided, but certainly if he knew his profeſſion at all, he could neither hope nor believe that any favourable change was poſſible; he was yet ready to adopt every ſeeming change as an apology for his want of faith, and neglect of duty. Cameron, encouraged by flattering pro-

ſeſſions, and bold promiſes, lived at large; and, one day dining at Leith with ſome young friends, he, in the midſt of their jollity, ſuddenly felt himſelf almoſt ſuffocated, a part of the polypus had given way, fallen into the fauces, ſtuck there, and was ejected after violent ſtruggles, and no ſmall danger: having thrown up this knob of the tumor, he preſerved it in his handkerchief, and returned inſtantly to town.

" His ſurgeon told him how fortunate he had been, that this was the chief part of the polypus, that this accident ſhowed a great diſpoſition on the part of nature to cure the diſeaſe, ſuch as needed only to be aſſiſted: he gave him now ſome parcels of thick bougies to paſs along the noſtrils, aſſuring him that this alone was required to preſerve the paſſages open, and deſtroy the remains of the tumor, and ſent him homewards, a journey of two hundred miles, rejoicing, no doubt, to have ſo deſperate a caſe diſpoſed of ſo profitably, and (in reſpect to his own reputation) ſo quietly, and ſo irreproachably.

" He travelled homewards very feeble, reduced by frequent hemorrhages, which often ſtopped him on his journey, and even before he arrived at home, the polypus was again felt ſenſibly in his throat: all his miſeries returned, deafneſs, ſtupor, head-achs, difficulty of breathing and ſwallowing, and hemorrhages ſo exceſſive, that, from month to month, he was reduced to ſuch extremity of weakneſs that he could hardly move; with this only conſolation, that he was among kind relations. He was not aware, that there were precedents in every book, and in daily practice, for acting upon this vile maxim, " Never meddle with theſe diſeaſes, or that ſtage of diſeaſe which ſeems deſperate, and where you have but a ſlender chance of deriving credit from your interference:" what is this ſtain upon the reputation that is ſo much dreaded? Surely in every deſperate diſeaſe the patient requires much care, and much ſympathy; and to retire under ſhelter of this cool and ſelfiſh maxim, ſeems to me no better morality than, if one were to refuſe to put forth a hand to a drowning creature for fear of wetting the ſleeve, not for fear of endangering one's own life.

" At the diſtance exactly of a year from the commencement of ' nature's operation's,' this poor man requeſted my aſſiſtance in circumſtances altogether deſperate, when little could be done, even to prolong life, where to ſave it nothing but a miracle could avail. I was induced by his earneſt and imploring manner to do whatever was in my power, and, encouraged by this reflection, that, in ſuch deſperate circumſtances, every partial ſucceſs, though it ſeems ſimply to prolong

life, is followed by an interval of tranquillity and hope; and by this rule and feeling I ſhall always be guided, doing as I would be done by, perſevering always even after all hope is over, if conſcious that I am doing no direct injury. I have told you how he was exhauſted by ſuffering, how diſtracted with pain, how overcome with ſtupor, except in the moment of violent ſuffering, and when I tell you that, upon the ſlighteſt intimation, that the proſpect of ſaving him was very ſmall by any operation, he refuſed food, I repreſent in one word his deſpair. The hemorrhage was particularly terrifying; and he obtained a promiſe of me, that, upon the firſt return of it, I ſhould introduce the plugs to arreſt it: from this moment I was entirely embarked in a deſperate cauſe; when the hemorrhagy returned, which it did with violence, and at midnight, I paſſed a ligature and drew up plugs from the throat to the back of the noſtril, and thus prevented him actually expiring, for he was now too far exhauſted to bear loſs of blood.

"I now called a full conſultation, and was not merely permitted but adviſed, at his requeſt, to try every method: I proceeded by paſſing a wire through the noſtril, and drawing it from the throat into the mouth, to nooſe the main tumor, which was bulky, depreſſed the palate to right angles, was very viſible in the throat, and felt, while I grappled with it, as bulky as the fiſt. The tube which I uſed for tightening this nooſe, ſtood out from his noſtril very ſtiff, having a very firm hold: I had alſo been careful to include a polypus which hung down in the noſtril, and thence expected after the operation of the ligature, that the paſſages ſhould be tolerably clear. The tube continued rigid and very firm for five days; he had in the very moment of tightening the wire, and for ſeveral days, a poignant excruciating pain, in all that ſide of the head, but eſpecially in the teeth and ear; the matter flowed, blacker, and more fœtid, diſcolouring the wire and the tube. On the fourth day the wire ſlackened, and the tube could be moved a little from ſide to ſide, I therefore drew the wire tighter: on the fifth he was ſuddenly reſtored to his hearing, he was ſenſible of ſwallowing the tumor, the wire dropped off, his pains vaniſhed, he ſwallowed eaſily, and he was ſo elated with hope and confidence, that he ate heartily, drank his wine, took exerciſe abroad, and felt aſſured of what no prudent man could promiſe, an abſolute cure.

"This was the period, in which having made way into the noſtrils ſo as to operate freely, I ſhould have ſearched boldly with my finger, introduced my knives, forceps, and cauſtics, and reſolutely extirpated the branches, and roots of the polypi; if I was guilty of any dereliction of duty, it was from no ſelfiſh nor trivial

motive; this was a caſe ſo deſperate in all reſpects, with a ſtupor ſo manifeſtly implying an affection of the brain, that I was afraid of cauſing inflammation and ſudden death; if at my next operation I was more reſolute, it was from deſpair, joined to the earneſt intreaties of the patient. In leſs than a fortnight I felt the tumor from the noſe riſing again; at this time, reſtored to ſtrength, and ſpirits, and the noſtril open, he could blow through it ſo freely, as to daſh out the foul matter and blood with great force, and my fingers could paſs deep into it. There was no ſenſible tumor in the throat, but in a little while the noſtril was much obſtructed; in a little longer, the tumor could be felt alſo in the throat; the hemorrhages returned, ſo that he was in danger of ſudden death. His entreaties were renewed, and Dr. Monro, Meſſrs. Wood, and Harkneſs, and the other Gentlemen, met again in conſultation, added to the patient's wiſh of having theſe attempts renewed, and were aſſembled again the day following, to aſſiſt in the operation: but I could not nooſe the polypus as at firſt, not becauſe of its leſſer ſize, but becauſe when I grappled with the tumor in the throat, it recoiled into the noſtril; when I reſiſted this by plunging a finger deep into the dilated noſtril, and met and reſiſted the tumor there, it ſeemed to recede into the antrum Highmorianum, and when I purſued the now moveable tumor, with the finger among the cells, I found, to my inexpreſſible horror, that every bone and bony cavity was entirely carious: the partition which divides the antrum from the cavity of the noſe was quite deſtroyed: the polypus occupied the cavity of the antrum: the edge of the vomer rough, carious, and diſengaged from its cartilage, met the finger, and the naſal branch of the upper maxillary bone was rotten: the polypi felt ſoft and mucous, and the whole ſeemed to be one maſs of corruption.

"Since our operation was begun, though it could, in theſe circumſtances, be nothing but unavailing, ſtill the patient's intreaties, together with our natural deſire to give him every chance of life prevailed. To prepare for this ſevere operation I paſſed a ligature by the noſtril to the mouth, fixed a plug of lint to it, kept it ready to be drawn up into the back noſtril, in caſe of hemorrhagy, which our patient could ill bear, introduced then the forceps, and catched at whatever branches of polypus were within my reach; turned the inſtruments in every direction, and cleared the noſtril by every means, however rude, and indeed ſo cleared it that he could blow freely, and daſh out a fluſh of blood, mixed with fragments of mangled polypus, to a great diſtance, and without permitting him to loſe even one ounce of blood, which indeed he could not have endured; I drew up the

plug, and made all close. In three days the plugs were removed *, the noſtril was in full ſuppuration, and the paſſages ſeemingly clear.

" But the ſame, or another polypus, ſoon appeared, ſmall in the noſtril, more conſiderable in the throat; the deafneſs, the pains, the loſs of voice, and the difficulty of breathing ſoon returned; and the patient, who, during a ſhort reſpite, in which he had eat, and drank cheerfully, and recruited his ſtrength, fell again into a ſtate of deſpair; and above all, this fear was moſt diſtracting to him, that we ſhould ſooner or later abandon him to his fate. The polypus had now attained ſuch a ſize, that it was again poſſible to nooſe it; and the hemorrhages were ſuch, that he felt diſtinctly that if nothing was done for him, he had not many days to live. The ligature was again paſſed, and the nooſe caſt over the tumor, and in four or five days, when its operation was compleat, the noſtril was ſo clean, and at the ſame time ſo dilated, that I paſſed the finger, and turned it in every direction with eaſe, almoſt to the throat. But I may ſay, my finger was hardly out of the noſtril, ere the tumor began again to protrude; and on the 12th or 14th day he had a dreadful hemorrhagy.

" There was now no alternative but death, or the moſt reſolute operations: I had not then learned to uſe the cauſtic ſo freely as I now do, and conſidered the partial application of the cauſtic as diſproportioned to the ſize and rapid growth of theſe polypi. I reſolved to burn, with the actual cautery, whatever remained of theſe polypi; and to give acceſs freely to their roots, I nooſed the polypus, the polypus which preſented, and cleared the noſtril a third time, and had a large cautery, with a proper canula, forged for the occaſion. But it was now the height of ſummer; the weather towards the end of July intenſely hot; the foul and peſtilent ichor which excoriated the lips outwardly, paſſed in ſuch quantities into the throat, that he was ſeized with diarrhœa; ſhiverings, and fever enſued: then a ſtate of ſtupor and extreme coldneſs ſucceeded; in five days he became quite inſenſible, and after lying three days more in a ſtate of complete ſtupor, accompanied with ſlight delirium, he expired."

* In removing the plug, you firſt undo the knot that ſecures the anterior plug in the noſtril; you then ſlacken the ſtring, that the poſterior plug may fall down towards the throat; if it do not fall down ſpontaneouſly, you puſh againſt it by paſſing a probe through the noſtril, holding the ſtring at the ſame time, that the plug may not go quite into the fauces: you put in your dreſſing forceps, catch it at the back of the palate, pull it forwards from behind the velum, and having brought it out of the mouth, you cut the ſtring in the noſtril, you thus extract it.

From this narrative you will learn how much more terrible this diſeaſe is than lues or cancer; for, with all that is loathſome or painful in thoſe diſeaſes, it is attended with hemorrhages, ſtupor, a confuſion of head, and affection of the brain, which I have always obſerved, is more than hectic or hemorrhagy, the immediate cauſe of death. If from the drawings of this patient's diſeaſe it ſhould appear, that I have not done all that was poſſible; that the tumor ſtill remaining, and repreſented in the drawing of polypus No. 5 at (u), was of ſuch a ſize as to admit the application of the ligature, and that the various ſmooth polypi ſeen in No. 4, hanging down (a b c), into the cavity of the antrum, might have been ſeized with forceps, and their roots killed with cauſtic or the cautery; let it be remembered in extenuation, that it is the very uſe of pathological anatomy, to ſhow us after death, what it would have been profitable to know during life; and to make our ſlighteſt errors manifeſt. Let it be remembered how ſmall, ſtringy, and moveable, ſo as to eſcape the graſp, theſe leſſer branches are, compared with thoſe of bigger ſize, which I did extirpate. And let it be remembered, that every thing I did to ſave this man, was at the peril of my reputation, and after, by long neglect, the diſeaſe had almoſt run its fatal courſe: at each new attempt, I was in danger of exciting that inflammation of the brain, which, at once, would have cut him off; and viſibly and directly (for ſo it would have been inferred,) by my raſhneſs *.

* The drawings No. 4 and 5, are thoſe of poor Cameron's noſtrils and throat. In the drawing No. 4, are repreſented, ſmall polypi hanging from the upper ſpongy bones and the roof off the antrum. Theſe three polypi (a b c), ſeem to ariſe by one pedicle, in ſuch a manner, that they might have been cut off by one ligature, or extracted by one pull of the forceps. This is merely a deception, from the manner in which they are laid over the probe, for each has its ſeparate and diſtinct root; each is ſlender and delicate; and like the polypi repreſented in another drawing, each is three or four inches long; they are white, and bleached from maceration, and ſhrunk, corrugated, and ſtringy, from the operation of the ſpirits; their roots are contiguous to each other, but ſeparate; all of them lay within the cavity of the antrum Highmorianum, from which they are raiſed to be laid over the probe; but it ſeems to me that the polypus (a), ariſes from the upper ſpongy bone in the noſe; the polypus (b), from the roof of the antrum, and the polypus (c), from the point of the ſpongy bone, a little farther back than the firſt; and thence I cannot but conclude, that (a) protruded when ſwelled and full of blood, and was the one apparent in the noſtril, while (b) filled the antrum, and (c) was felt indiſtinctly in the throat behind the velum. This laſt ſeems to me to be diſtinct from that which, in the next drawing, is ſeen from behind. All of them, when I introduced my finger into the dilated noſtril, felt like a confuſed maſh of ſoft and formleſs fleſh, among which the finger could diſtinguiſh no particular tumor. The tolerably firm, and yet natural conſiſtence of theſe ſeveral polypi, refutes the contemptible and ſchool-boy like con-

Since I have repreſented almoſt every other form and ſtage of the diſeaſe, let me repreſent this alſo, of delirium and inflamed brain, brought on by a raſh and ill-timed working with forceps.

I have often found the polypus advanced to its laſt ſtage of caries, and external abſceſs, even in the ſixth month after it was firſt obſerved; if not actually in

ception, of a polypus being *cancerous*, merely becauſe it is fatal, while in fact it is ſo by its effects on the adjacent parts. It is not without regret that one looks at diſſected parts, and doubts whether more might not have been done while the patient was alive. I am myſelf aſtoniſhed to think, ſeeing that I really proceeded in a bold and fearleſs manner, that I could miſs theſe polypi: that they were not either extracted by the forceps; or deſtroyed by the manner in which they were turned round in clearing the noſtril: or cut acroſs by ſome ſtroke of the knife: they ſeem to me to have eſcaped by receding into the antrum; and by their roots lying particularly high towards the ſocket of the eye.

It will be advantageous to name, for the ſake of clearneſs, ſome of the adjacent parts: (**) mark the ſection of the cranium; (d) the orbit ſtill entire, with globules of fat in it; (e e e) the bones cut ſo as to lay open the ſide of the noſe; (f f) the margins of the orbit; (g) the cut ſurface of the cheek-bone, where it forms the lower part of the orbit; (h) a large opening in the alveolar proceſs of the upper jaw-bone, it is the place from which the laſt of the molares had dropped out, and from whence the horribly fœtid matter of the antrum diſtilled. I do not remark any other point in this drawing worth deſcribing to you. The next drawing, No. 5, is ſtill more intereſting; it ſhews you the form of the parts within the throat, and their relation to each other; and will teach you, what your eyes ſee, and how far your finger reaches polypi: (a a a) is the ſegment of the ſcull, and (b b) the ſella Turcica; (c c) a ſection of that part of the bone from which the pharynx or membrane of the throat hangs down; (d d d) marks the margins of the pharynx, or gullet, ſlit up and thrown backwards; (e e) the point where the thyroid and cricoid cartilages, which keep the pharynx extended, and protect the trachea or windpipe, are cut; (f) is the continued tube of the gullet unſlit, plainly muſcular, and very ſtrong, and ſtretched upon the ſtick (g) introduced into it; (h h) is the velum pendulum, or moveable curtain, which divides the mouth from the throat, and ſerves as a valve for the back openings of the noſtrils; it is ſtretched by the two cords, by which the præputium is hung, and (i) is the uvula, pap, or gurgalion, or little gland in the center of the curtain: (k k) are the two corners within the triangular folds of the membrane of the fauces, in which the tonſils are lodged; theſe folds of the membrane, terminate in the top or opening of the trachea; the opening or glottis (guarded by its two arytenoid cartilages (m m)) is marked (l): the epiglottis, or flap which, when depreſſed by the retraction of the tongue, and the preſſure of a morſel, claps down upon the glottis or opening of the trachea to protect it, is marked (n); the root of the tongue is marked (o). Theſe are the parts within the throat; but in the noſtrils, above the velum, the light is ſeen directly through at the point (p), which is the fore-opening of the noſtril, ſeen from behind, or rather ſeen through: (q q) are the ſpongy bones of the left ſide, indiſtinctly ſeen; (r) is a little ſlip of membrane, hanging over the polypus; (u) is the body of the polypus, filling all the back part of the right noſtril, and tangible from the throat, where, by feeling for it with the finger, you diſtinguiſh it through the velum pendulum.

the ſixth month of its growth, and fatal within the year. So it was in the good woman, whoſe death I am now going to deſcribe; in her caſe indeed it would have been ſo, although no ſuch rude operation, as that I am now going to ſpeak of, had been performed.

" G. T. a good woman of forty-five years of age, was afflicted with polypus, which had long obſtructed her breathing: for half a year or more, the right noſtril had been impervious; during the three ſucceeding months ſhe had been deaf, and torpid; the tears flowed continually over her cheek, and the tooth-achy and rending pains of the face and head, became at times diſtracting. The right noſtril was filled manifeſtly, with a ſoft and mucous polypus, the eye watery and inflamed; the cheek ſuppurated and burſt, near the canthus of the eye; the whole ſide of the head was pained, the cheek and jaws ſwelled, ſoft, inelaſtic, and doughy; a purulent and thick matter flowed from the ſuppurated parts, at the inner canthus of the eye; while a thin and fœtid matter diſtilled from the noſtril, and excoriated the lip. Her general head-ach was aggravated by a more pungent, and tooth-achy pain in the noſe and jaw: yet ſhe ſeemed hale, and vigorous; and there appeared no reaſon to fear ſuch a ſudden or dreadful cataſtrophe from any operation, however rude; let this caſe then be a warning to you.

" A conſultation decided that an operation was adviſable, and it was performed by the forceps. To my apprehenſion, no polypus was extracted; little rags, of a ſoft and mucous matter, ſeemed to be ſqueezed by the forceps into a mere jelly; the forceps were uſed for twenty minutes, with no great delicacy; a ſmall piece of bone was found among theſe rags of the polypus; there was not even any remarkable hemorrhagy: when invited by one of the attendants to look into the largeſt portion of the polypus, I found it no other than a roll of lint ſoaked with blood. She was reported to breathe more eaſily through the noſtrils, but for that ſlight and momentary relief ſhe paid a dear forfeit.

" On the day following the operation, her pulſe roſe; there were manifeſt ſigns of an increaſing pain; the pain ſhot through all her head; ſhe was hot, and thirſty, with a ſmall and rapid pulſe; her anodyne draught produced no pleaſant nor refreſhing ſleep.

" On the ſecond day, the noſtril, the face, and eyes, were extremely pained, and the ſhooting pains and confuſion of head increaſed; but all this inflammation was internal, (not the leſs dangerous for being ſo), the eye and cheek were little apparently affected.

" On the third day, the heat, thirſt, rapid pulſe, and general diſorder within the head, were alarmingly increaſed. The ſaline draughts, the ſhaving of the head, and the poultice in which the whole face was involved, availed nothing.

" On the fourth day, at nine in the morning, ſhe was found inſenſible, and remained ſo; the pupils of the eyes dilated, the breathing ſlow, and ſtertorous, and the bladder paralytic, ſo that the urine needed to be drawn off with the catheter.

" On the fifth day, ſhe lay in a deep apoplectic ſtupor, had no ſtool, paſſed no urine, was viſibly ſinking; a bliſter applied to the head had its effect; the ſinapiſms alſo inflamed the ſoles of the feet, but ſhe could not ſwallow.

" On the ſixth day ſhe continued comatoſe, ſunk gradually during the night, and expired before morning: and upon diſſecting the head, the polypus was found a mere pulp of putrid fleſh: the ethmoid bone deſtroyed on the right ſide, and the veſſels of the brain were found turgid with blood; its upper ſurfaces ſuffuſed with water, and its lower ſurface in a ſtate of ſuppuration. Here are the terms in which the appearances, on diſſection, were noted down."

DISSECTION.

" Upon removing the ſcullcap, the ſinuſes and arteries of the dura mater ſeemed to be unuſually turgid with blood: when the dura mater was cut and turned aſide, thoſe of the brain were found to be extremely turgid with blood: over the *right* hemiſphere of the brain, there was an effuſion of coagulable lymph; on the *left ſide* the effuſion was merely of ſerum; the ventricles were much diſtended with water: the ſame effuſions of ſerum, and coagulable lymph was found upon the lower ſurface alſo of the brain, and there the dura mater was manifeſtly inflamed. The cribriform plate of the ethmoid bone was gone, being entirely deſtroyed by caries. The bones of the right ſide of the noſe ſeemed all looſe and carious; but all below the ethmoid bone within the noſe, was an indiſtinct maſs of putrid and mucous fleſh and bone."

Having thus ſet before you many leſſons, and ſome examples, and proved what I have deſcribed, by true drawings, and illuſtrated the operations I recommend to you by plans; I leave you to your own diſcretion, ſenſe, and judgment, reminding you only, that this like every tumor, ſhould be reſiſted at an early period of its growth: that theſe are not maladies to be cured by gentle and trivial practices.

DISCOURSE VI.

ON TUMORS OF THE GUMS, LIPS, CHEEKS, AND THROAT.

THIS is, in every ſenſe, an arduous ſubject; eſpecially if it was my deſign, to reconcile every appearance of diſeaſe in thoſe parts, with their complicated and curious ſtructure: parts in perpetual motion, parts performing a variety of functions, as chewing, ſwallowing, ſpeaking, breathing: parts provided with various glands, ſalivary, and lymphatic, and ſecreting even from their ſurfaces, fluids of various properties. Surely ſuch complicated ſtructure muſt be a ſource of various diſorders; for always in the animal body, as in leſs perfect machines of human invention, no part is ſo formed as to ſerve various purpoſes, and to perform many functions perfectly. Reaſoning from the complicated and intricate functions and ſtructure of theſe parts, you would find cauſe to believe, that their diſeaſes muſt be very anomalous; obſerving, on the other hand, the ſtrange tumors, obſtructions, and unnatural communications of one part with another, you would be inclined, as every one unacquainted with our ſcience is accuſtomed indeed to infer, that the complex ſtructure of the parts about the throat and jaws, were the ſource of much danger and miſery.

This confuſed impreſſion of complex ſtructure, and proportioned danger, was all that ſtruck me when firſt I entered on my more mature and ſerious ſtudies; without a hope of ever arriving at any ſatisfactory knowledge of ſubjects ſo ſlightly mentioned in books. But time and diligence has enabled me to do ſomething for myſelf, and ſomething for you. If you find in this Diſcourſe no pleaſing and deluſive ſpeculation, you will, I truſt, find many uſeful precedents, and ſuch accurate diſſections, and ſummary hiſtories of diſeaſes, as will induce you to be ſtudious, and help to make you ſuperiorly uſeful.

When we can diſtinctly perceive, that it is from ſomething peculiar in the ſtructure of a part that diſeaſes are frequent and complicated, precedents are very precious; for we are irreſiſtibly inclined to reaſon on the cauſe of ſuch organic diſeaſe; and it is only under the correction of plain facts and diſſections, that we can reaſon ſafely.

I muſt acknowledge, while I can no way explain the fact, that the gums, lips, and inner ſurface of the cheeks, parts ſeemingly inſenſible and indolent, give riſe to tumors which are indeed ſlow, firm, indolent, and void of pain in their early ſtages, but in their latter ſtages, of unparalleled malignity, aſſuming uſually a fungous form; and, when the firm and indolent tumor thus burſts out into a fungous efloreſcence, its growth is ſo rapid, that I know nothing to equal it, not even the fungus of the brain! it riſes à vue d'œil, you almoſt ſee it grow, and, when extirpated partially, it ſprouts up again before the blood of ſuch imprudent inciſions is dried up. The tumors of the gums are ſpongy, luxuriant, hemorrhagic, and truly cancerous: thoſe lodged within the ſubſtance of the cheek, knotty, indolent, ſlow, malignant, and, however long they are of ſhowing their malignant nature, they terminate, if neglected, (and much it is to be lamented, that, from the patient's fears, and the ſurgeon's timidity, they often are ſo,) in the moſt incurable and deſperate maladies.

The gums are ſubject to ſuch an infinite variety of ſlighter ſwellings, to boils, to little indolent tumors reſembling the hordeoli, or tumors of the eye-lid, and to harmleſs indurations, that thoſe which are the germs of the moſt horrible diſeaſes, are too little ſuſpicious, too ſlightly characteriſed by any peculiarity of form or aſpect to attract attention, till too late. A ſmall, firm, ſeed-like tumor is perceived, but hardly noticed, for months; it is ſeated between two of the fore teeth, begins to ſeparate, diſplace and looſen them; it grows imperceptibly and ſlowly: the teeth are raiſed from their ſockets; they become looſe and vaccillating; they have no longer any hold of the jaw, but are merely hanging in the tumor; the tumor retains its original griſtly hardneſs at its baſis, becomes rugged and irregular in its upper part, with a cock's-comb-like edge: though little painful, it bleeds from time to time; it extends itſelf to the gums of other teeth, which are ſucceſſively diſplaced from their ſockets and looſened, and one ſide of the mouth is occupied with it. Next the hard baſis of the tumor extends into the cheek; the tongue begins to be puſhed aſide, horrible fœtor of the mouth enſues, with frequent hemorrhages; the tumor now protrudes and keeps the mouth open; the diſeaſe becomes now terrible and painful, the patient ſurvives for a few weeks, with the mouth and lower part of the face wrapped up in handkerchiefs, in a miſerable and loathſome condition; the putrid and blackened blood diſtilling with the acrid ſaliva through the filthy clothes, till waſted by ſuffering he dies in inexpreſſible pain. Such

is the kind of death, from which, I ſincerely believe I have ſaved many by a ſlight inciſion.

" A young Gentleman, Mr. H——, about 25 years of age, of an athletic form and healthy conſtitution, and without the ſlighteſt taint of diſeaſe hereditary or acquired, had, from no perceptible cauſe, a tumor firm, cartilaginous, and elaſtic, ſeated ſo fairly in the center of the gums, as to raiſe the two center teeth of the lower jaw from their ſockets far above the general range of the teeth, and ſeparate the two that lay adjacent. Gradually, but yet in a ſhort period, in a little more than three months, it had ſeparated thoſe two central teeth, projected from betwixt them, and increaſed to a very remarkable ſize; and, though it had begun from the inſide gum, the greater portion ſeemed to be before the gum, juſt over the chin, projecting the nether lip.

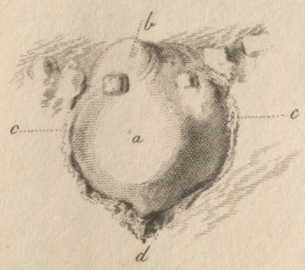
" This tumor was about the ſize of a walnut, irregularly globular, knobby, and ſhining; when moved by preſſing it with the thumbs, backwards and forwards, it ſeemed firm, fixed, and actually a tumor of the jaw-bone; yet I knew it by its ſmooth knobular form and its elaſticity to be a tumor of the gum. It felt, when preſſed between the finger and thumb, ſo elaſtic, that a tyro muſt have believed it to contain a fluid, while I know it to be in truth a ſolid tumor, neither ſuppurated, nor capable of ſuppuration. Its general aſpect was that of a tumor ſo indolent, that nothing need be dreaded from it, and ſo much had it the form of one that might contain matter, that our Dunkeld ſurgeon *, or even a more ſkilful one, might have been induced to ſtrike his lancet into it; but I was well aware, that not a drop of matter would follow any puncture made into it, that the tumor inflaming, would turn out its edges, ſpread into a fungus, and, in a few months, cauſe a horrible and melancholy death.

" Dr. Munro, Mr. Allan, and myſelf, having conſulted on the nature of this tumor; judging by the analogy of former caſes, declared it to be of a moſt dangerous nature; it had already diſplaced the teeth, probably injured the alveolar proceſs of the jaw-bone, attained to an alarming ſize, and threatened, in no long period of time, to aſſume the moſt malignant poſſible form: we explained to our patient, that it contained no matter, was incapable of ſuppuration, was of a ſize that forbid all hopes of reſolution, was ſure to become cancerous, admitted of no delay, and we explained, that we dared not, even in its firſt and leaſt alarming ſtage, do leſs

* Vide page 165.



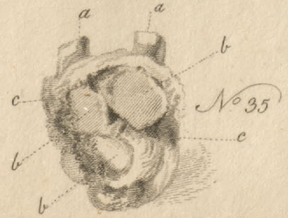
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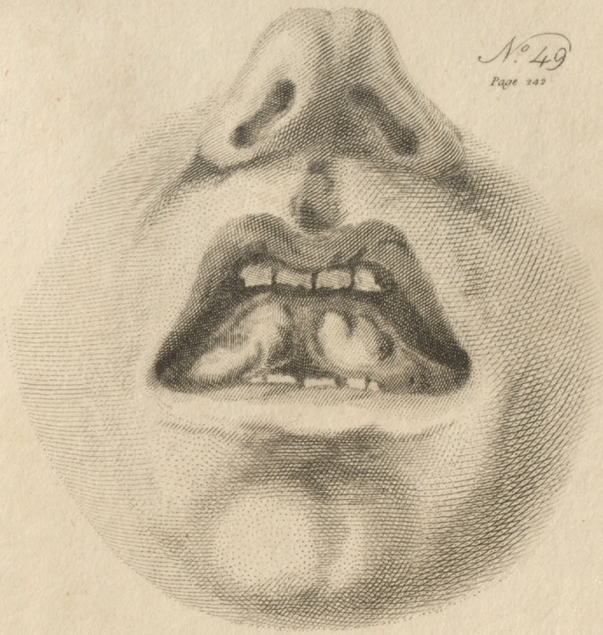


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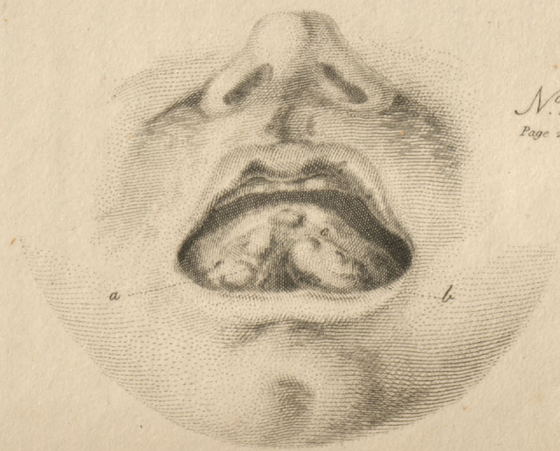


N°34





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Drawn by J. Bell.

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Engr.d by E. Mitchell.

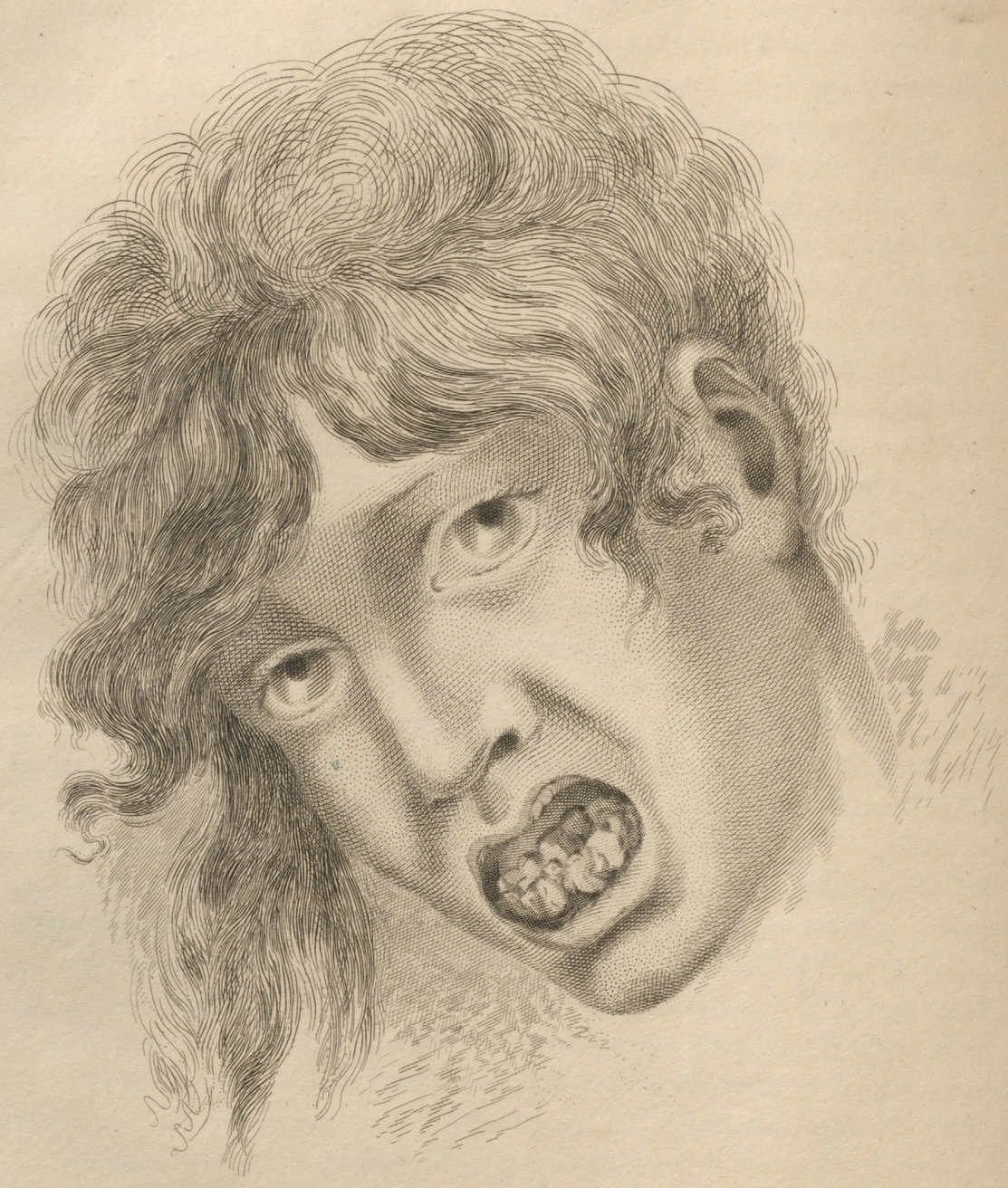
than extirpate it from the very root: we repreſented the operation was harſh but not tedious, void of danger, even of hemorrhagy. That nothing was to be feared but the not cutting it completely out.

"In preparing for ſuch an operation it is right to have ready the apparatus of a dentiſt, eſpecially forceps to twiſt out the teeth, ſtrong pincers to cut the ſolid gums, engravers' knives to cut away whatever is corrupted of the jaw-bone, and pieces of dry and ſolid ſponge, to thumb down into the void left by extirpating the tumor, in order to prevent hemorrhagy; and two things the ſurgeon muſt be prepared to encounter, great difficulty in cutting the tumor, and ſuch confuſion from the mouth filling, like a cup, with blood, that, after the firſt ſtroke, he can ſee nothing of what he does, but muſt proceed by feeling. The ſurgeon has much reaſon to fear that, in an operation where his view of the inciſions is ſo obſcured, he will be guilty of much unſeemly mangling and tearing; yet the pain of ſuch an operation, however rudely performed, is nothing to be compared with that of pulling out a rotten ſtump, and the motives infinitely more perſuaſive than a tooth-achy pain.

"In performing this operation, I held the jaw-bone firm with the fingers and thumb of my left hand, while my aſſiſtant inverted the lower lip, and, with a ſcalpel of ſpecial ſtrength, broad-backed like a cartilage knife, I made the inciſion repreſented in No. 32, which repreſents the general form and ſize of the tumor; —No. 33, repreſents the manner in which the inciſion was carried round the tumor; (a) repreſents the place where there ſeemed to be a fluctuation deep in the moſt central part of the tumor; (b) the apex, or moſt prominent point within the teeth, and extremely hard and firm; (c) repreſents the two legs of the inciſion, carried down to the point (d), in ſuch a form as to reſemble the letter V, or the Greek delta. The knife was carried by the ſide of each of the diſplaced teeth; all my ſtrength of hand was requiſite to carry the knife down to the angle; blood inſtantly filled the mouth, ſo that, after the firſt ſtroke of the knife, every thing was done by feeling; but I cut with ſuch deciſion, with ſuch level lines, and made them ſo fairly meet each other in the angle (d), that, by preſſing my two thumbs, one within ſide of the tumor, the other without, and puſhing alternately with my thumbs, and poiſing with the flat handle of the ſcalpel, I puſhed the tumor out, clean and unmangled, leaving a very wide opening bounded by the fangs of the adjacent teeth; and, after allowing the part to bleed till it ſtopped, I laid a piece of ſponge in the deep triangular cleft made by the operation, and cloſing the upper

range of teeth upon the ſponge, their preſſure kept it in its place. This ſponge was removed the ſecond day; ſimple dreſſings of dry lint rolled in the ſhape of a pellet was ſubſtituted for the ſponge; during eight or ten days our patient ate cautiouſly, and, in little more than ten days, the inciſion was completely healed.

" I was greatly intereſted in knowing the internal ſtate of the tumor in this ſtage; for I regarded this ſmall tumor as the germ of that terrible diſeaſe, which I knew ſo well by experience, for which I had operated ſometimes ſucceſsfully, ſometimes at ſo late a period as only to witneſs, perhaps to accelerate its fatal cataſtrophe. There had, upon making the inciſion by the ſide of one of the teeth, appeared a little matter, but ſo very little as hardly to be perceptible in the time of a bloody inciſion, and not at all to diminiſh the ſize of the tumor; but whether there was any fluid, purulent or gelatinous in the center was ſtill doubtful. No. 34, repreſents the tumor with its two adhering teeth, and eſpecially it is deſigned to repreſent the globular and bulging form of the tumor. No. 35, repreſents, by a ſection, its internal ſtructure; (a a) the two middle inciſores; (b b b) globules of a firm and ſolid glandular ſubſtance; (c c c) repreſents the thick cartilaginous coats of the tumor, being the ſubſtance of the gums degenerated; and (d d) marks the granulated internal ſurface of the walls of this tumor. In the central parts were ſmall cavities, and, when they were cut vertically, a gelatinous ſubſtance oozed out. The internal ſurfaces were ſtudded with ſmall grains like millet ſeed: the thickneſs and cartilaginous texture of the coat of this tumor formed by the gums, ſhews that the matter would have been long in making its way through them; its gelatinous nature proves that the cavity would not have cloſed; the irregular ſurface ſtudded with ſmall grains of a glandular nature, explains to us how ſuch a tumor, after burſting, turns inſide out, and degenerates into a granulated maſs of fungus, ſprouting in berry-like knobs, and little maſſes of vaſcular granulation. Whatever cavity there is in a tumor of this ſolid conſiſtence, ſeems to me like a calix ready to burſt, and turn out its inner ſurface, with a new and luxuriant growth of fungus. The diſſection of ſuch a tumor, having fleſhy walls and granulated internal ſurfaces, always reminds me of the imprudence of partial inciſions, in conſequence of which a part of the walls of the tumor being left, the worſt part of the diſeaſe is left: a fungus ſprouting up from the bottom of the wound, is the firſt intimation of the diſeaſe being imperfectly extirpated, a rapid growth, hemorrhagy, pain, and, in one word, cancer enſues: and theſe are as invariably the conſequences of ſtriking a lancet into ſuch a tumor, as of imperfect and ill concerted operations.



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CANCEROUS DISEASE OF THE GUMS.

Drawn by J. Bell.

Engraved by F. Mitchell.

Published as the Act directs, Jan.ʳʸ 1ˢᵗ 1806 by Longman, Hurst, Rees, & Orme, Paternoster Row.

"This Gentleman is perfectly cured, the gums and adjacent teeth firm and found, and I confeſs I could not reflect on the ſtructure of this ſmall tumor, without ſaying within myſelf, what would have been the ſtate of this tumor in three months? What would have been his condition in ſix or eight? In its ſecond ſtage, in little more than three months, it muſt have filled the mouth with a fœtid bleeding fungus! In eight or ten months it muſt have aſſumed the perfect character of incurable, loathſome cancer."

It appears to me that, in many caſes which I have been involved in, the diſeaſe appeared in a more inſidious form, no circumſcribed tumor, no formal diſeaſe awakening the attention of the patient, preceded the fungus; no ſuppurated cavity opened, and turned its diſeaſed ſurface out, in form of fungus; but the mere ſeparation of the gums from the teeth, and alveolar proceſs of the jaw, had the ſame effect, for this is the deſcription of what I have frequently ſeen; and the ſketch, No. 36, exemplifies it in the caſe of a young woman who, I fear, never recovered. In this girl, not more than twenty years of age, the gums of one or more teeth became ſpongy and roſe in jagged points, ſeparating from the teeth: the roots of theſe diſeaſed parts of the gum became hard and tumid, in proportion as their jagged points became more ſoft and luxuriant; the diſeaſe ſpread from gum to gum, till it extended along the whole range of the jaw; the whole ſubſtance of the gums became thus ſpongy, thick, and fleſhy, riſing into the form of a tumor, of a deep red or liver-colour, with a hard and ſchirrous baſis, a bleeding ſurface, and cock's-comb-like edges: hemorrhages burſt frequently from the general tumor, while a viſcid and extremely fœtid matter iſſued from about the roots of the teeth. This tumor was ſo vaſcular, that the teeth, though poiſed from the ſockets, and univerſally looſe and vacillating, were almoſt buried in it, and ſtrong bridles of fleſh extended acroſs, from that which was external to that which was internal, in regard to the range of teeth, through their interſtices. To look into the mouth, you would imagine you ſaw it occupied totally with a very ſolid tumor; when you preſſed it with the fingers, you found it ſpongy and ſoft; when you tried it with the probe, you found it a mere tiſſue of veſſels, through which you could puſh the blunt point of it in every direction; when you felt for the alveolar proceſs with the probe, you were conſcious that the bone was carious. By the general aſpect of ſuch a tumor you would be deceived, for you would imagine it, eſpecially in its early ſtage, to be nothing worſe than a ſpongy intumescence of the gums, which you might [illegible] clear away with a ſcalpel, or almoſt ſcrape off with a ſpoon.

No 26.



Drawn by J. Bell.

Engraved by

Published as the Act directs, Jan.ʸ 2.ᵈ 1806. by Longman, Hurst, Rees, & Orme, Paternoster Row.

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while it is, in truth, a tumor ſo malignant, that I have myſelf performed, and ſeen others perform, very painful and very unſucceſsful operations. It is one of a character ſo peculiar, that I know nothing but a careful and early extirpation of it that will prevent miſchief in its latter ſtage, nor any thing but a fair, open, and candid prognoſis can protect the ſurgeon from obloquy: be aſſured it is unſubduable by the knife, cauteries, or cauſtic; I have ſeen it, after long continued and cruel cicatrizing, grow for three months, the patient being permitted to retire from this torturing proceſs to the country, only when hopeleſs and deſperate, there to die unobſerved.

The caſe which I am now to relate to you, is one which was conſided to my care too late to ſerve any other end, than as a melancholy example of the conſequences of leaving ſuch a diſeaſe to run its natural courſe; a timely operation might have preſerved this worthy man in health to his family.

" Mr. Keil of Monargan came to town to conſult me late in the month of Auguſt, 1802, after a regular correſpondence with his attending ſurgeons Dr. Stewart and Mr. Nimmo. Though paſt the prime of life, he was a ſtout and luſty man, healthy, laborious, and active. His whole mouth was filled with a fungous tumor of the worſt complexion, wanting no character of cancer, but that it was void of pain; from imperceptible beginnings, and by very ſlow degrees, it had increaſed to ſuch a ſize as to fill the whole mouth, preſs the tongue entirely to one ſide; his ſpeech was embarraſſed, and his ſwallowing difficult and painful, for he could no longer cloſe his mouth correctly, the tumor beginning to protrude. The tumor was of a deep red colour, irregular, and ragged on its ſurface, luxuriant, and of ſuch rapid growth, that, in a few months, it had attained this horrible form: it projected from his mouth, kept his teeth ſeparate, raiſed thoſe of the lower jaw from their ſockets, ſo that they (all thoſe at leaſt of the right ſide of the mouth) ſtood high above the range of the adjoining teeth, and entirely looſe, ſo looſe that they could be picked out with the fingers, and ſome of them were picked away with the fingers before the inciſions were begun. The tumor was void of ſtinging or lancinating pains, no rude preſſure of the fingers excited any but the ordinary ſenſation; it was ſoft, ſpongy, and bleeding in its extremities, or cock's-comb-like edges, ſolid and fleſhy in its middle parts, and bulging and firm as bone itſelf where it roſe from the jawbone: it was neither on account of pain, dangerous hemorrhagy, nor fœtid ulceration, that the patient was now thoroughly alarmed, but by the rapid growth and horrible form of the tumor; and, from the increaſing ob-

Fig: 1

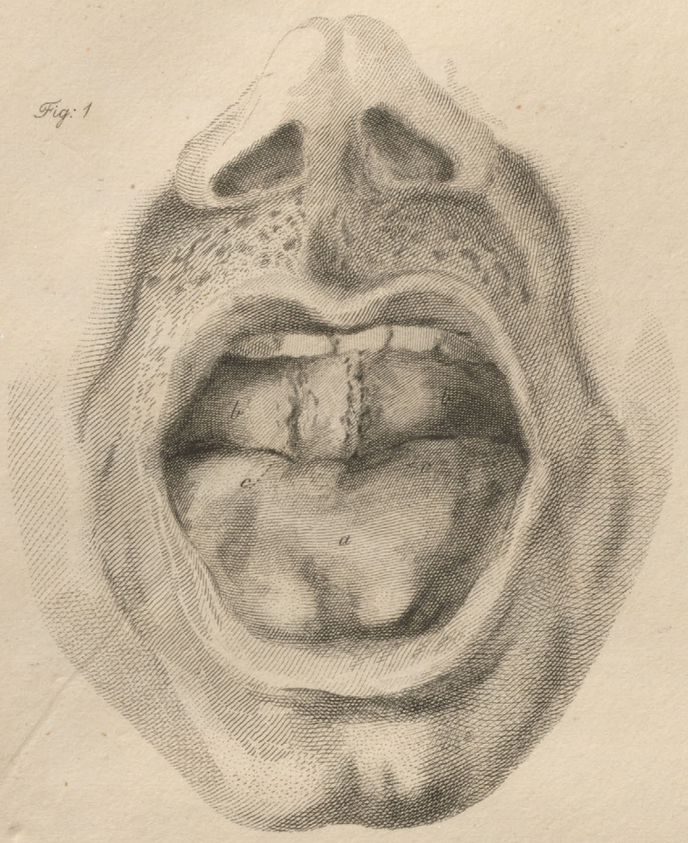


Fig: 2

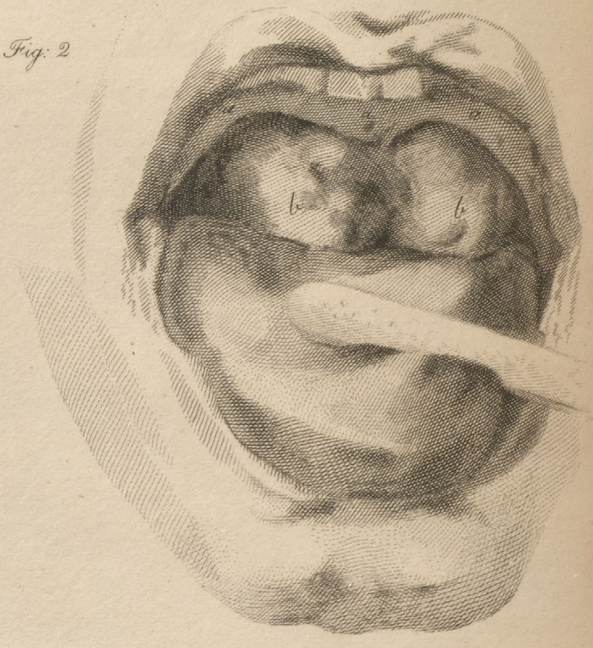


Fig: 3



Fig: 5



Drawn by J. Bell.

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Engr.d by E. Mitchell

ſtruction of ſpeaking and ſwallowing, he was conſcious that he could not live, and deſirous of any operation that might give him even a chance of ſurviving, for he was ſatisfied, there being no blood-veſſels, nor other dangerous parts in the vicinity of this tumor, that the operation, though painful, could not be dangerous."

Opinion on Mr. Keil's Caſe.

" Mr. Keil cannot have witneſſed the doubts and difficulties of his attending ſurgeons, without being aware of that imminent danger, which it falls to my lot to announce to him; and my duty and conſcience equally incline me, to declare it without loſs of time, and without reſerve. A tumor ſo unuſually rapid in its growth, cannot ceaſe to grow, but muſt continue to extend the diſeaſe by increaſing the caries of the jaw-bone, and propagating the morbid action among the ſurrounding parts: the hardened baſis of the fungus will ſoon ſpread into the cheek; abſceſs, and indurations of the lymphatic glands will enſue, each ulcer will throw out its fungous efflorescence, and the diſeaſe will burſt out upon the face and angle of the jaw, with all the virulence, and more than the deformity of a real cancer; this reſembles in its form that fatal fungus which ſometimes ſprouts from the axilla, after amputation of the cancerous breaſt, or that which ſtill more frequently proceeds from the ſpermatic cord, after extirpation of the ſchirrous teſticle, and which no methods, even the moſt ſevere and rude in ſurgery, have ever been known to ſubdue.

" I am of opinion that, though not accompanied with pain, nor as yet with much fœtor, nor with profuſe bleeding, nor bearing the preciſe character of cancer, this tumor is equally incurable except by the knife, and ſure to prove fatal if neglected, (as I fear it has already been neglected,) too long. When I ſpeak in favour of operation, I muſt do ſo with a degree of reſerve: I wiſh I might propoſe it as a ſure reſource, but the difficulties, and the chances of ſucceſs are ſo equally balanced, that he would, in my mind, be an inconſiderate and preſumptuous man, who would, in theſe circumſtances, confidently promiſe a cure; but he would, on the other hand, be inhuman and ſelfiſh in the extreme, who, for fear of any reproach that might attach to his own reputation, would refuſe our patient the only remaining chance of life and health. The terrible ſtage of ulceration, protruſion, and hemorrhagy, and probably of pain, which is ſoon to enſue; the loathſome and miſerable condition, which is inevitably approaching, would be more grievous

to his friends, if, from any want of conſtancy, we ſhould decline our help; and they will feel, at ſome future period, a degree of ſelf-reproach for any preſent loſs of time. But I am beginning to reaſon on moral feelings and duties, which belong to others, when I am expected, perhaps, to deliver only my opinion on the medical import of the caſe. I have, in the previous part of this letter, explained the grounds of this opinion, with unaffected deference to the judgment of theſe profeſſional Gentlemen, who, having ſeen the beginnings, and watched the progreſs of this diſeaſe, have had time to reflect ſeriouſly on its nature and conſequences. I adviſe the operation, and, ſhould this be your opinion alſo, and the wiſh of our patient and his friends, ſhall be ready to perform it,—the beſt proof I can give of the ſincerity of my opinion."

This Gentleman, conſcious of his impending fate, adviſed by his ſurgeons, that this was the only chance he had for life, without concealing that it was but a ſlender chance, gave his conſent, and became every moment more anxious that it ſhould be done quickly; but ſo critical was his ſituation, that before the neceſſary arrangements were completed, a gland at the angle of the jaw had ſwelled, an abſceſs there was diſtinctly perceived, the hard baſis of the tumor had run deep into the cheek, and, at this moſt inauſpicious moment, when every thing had aſſumed the moſt unfavourable aſpect poſſible, the importunity of the patient, and his friends, became very great, and I received repeated notes from Mr. Nimmo requeſting and urging me to come *.

Nothing can be more unpleaſant to a ſurgeon, who has any pretenſions to ſkill, than an operation neceſſary, mangling, cruel, and ſavage in appearance, performed within the mouth, beyond the ſight of the aſſiſtants, and where even the long inciſions muſt be guided by the finger, where the diſſection muſt be irregular, and the whole muſt be done blindfold, from the blood with which the mouth is filled; where the beſt ſurgeon can hardly ſay he is ſure of what he has done, nor confidently think he has cut away the whole diſeaſe. The operation in this caſe conſiſted, *firſt*, in picking away ſome of the looſe teeth which lay in the way of the diſſection: *ſecondly*, in a tedious and painful diſſection, by which the tail, as I

" * Dear Sir, " Dundee, Monday Evening.

" At the deſire of Mr. Keil, I take the liberty of again troubling you, to beg that an early day may be fixed on for the operation, as he is extremely anxious to have the tumor removed immediately, it having increaſed conſiderably within theſe few days paſt, and occaſioning ſome redneſs of the cheek.

" I am, &c."

may expreſs it, or a prolonged and firm part of the tumor, which connected itſelf with the cheek, was ſeparated from its inner ſurface, near the angle of the jaw, and diſſected down nearly to the chin; the cheek being reduced in all this extent to extreme thinneſs: *thirdly*, in a long and direct inciſion guided by the finger, which ſeparated the firmeſt part or baſis of the tumor, from the whole length of the jaw-bone, from the angle all round paſt the chin, and nearly to the canine teeth of the left ſide, where alone the gum remained ſound. *Fourthly*, in carrying a like inciſion, more dangerous by far in point of hemorrhagy, round the oppoſite or inner ſurface of the jaw-bone: *fifthly*, in diſſecting away the tumor from the jaw-bone, from the ſide of the tongue, and from the whole circle of the mouth, a work not accompliſhed without frequent interruptions from hemorrhagy, irregular, and which was performed by inciſions rude and mangling: and, finally, all the teeth of the right ſide of the lower jaw were twiſted away with the tumor, and the bone ſcraped clear of all remains of the fungus, down to that decided line of inciſion, by which the root of the tumor was ſeparated.

I need not ſay how careful I was to make the extirpation complete; or how much I riſked in diſſecting the cheek, ſo as to leave merely the thickneſs of the ſkin, not without a thouſand anxieties and fears, leſt it ſhould ſlough off. I left this Gentleman, on the third day, under the care of Dr. Stewart and Mr. Nimmo, and am ſure that never were aſſiſtants more careful of their patient, nor more ſincerely intereſted in the ſucceſs of another; his paſtor, Mr. Smith, took upon him, with the moſt charitable diſpoſition, every little arrangement, nurſed him, and watched him. Mr. Nimmo's report will beſt repreſent the progreſs of this malady, the promiſing appearance at one period, and the diſmal reverſe, not unexpected, which followed, after a few days of retirement in the country *. He died in a

* "Dear Sir,

"I have continued daily to ſyringe Mr. Keil's mouth with the aſtringent ſolution, and applying afterwards the alum and borax to the ſurface of the ſore, as you directed; but for theſe two days paſt, I have, with much concern, obſerved, that the fungus is again begun to ſprout up about the angle of the jaw, and that part of the cheek from which the hard tumor was cut, has acquired a conſiderable degree of hardneſs, and is at the ſame time thicker than when you laſt ſaw it: indeed it has aſſumed ſo much the appearance of what it had before the operation, as to induce me to apply the cauſtic pretty liberally over the diſeaſed ſurface. Mr. Keil has little or no pain, ſleeps well, has tolerable appetite, is quite free from fever; there is but little ſuppuration of the cut parts, and ſcarcely any fœtor. The external abſceſs on the cheek ſtill diſcharges a little good matter.

"As ſome powerful eſcharotic will be neceſſary to keep down the tumor, and fungus, and as Mr.

painful and loathſome condition, with this terrible and fœtid fungus, protruding both from the mouth, and through the opening of the gland which had ſuppurated at the angle of the jaw. Far from being any argument againſt the early extirpation of tumors, the whole ſcene ſtruck me as a moſt melancholy inſtance of the danger of delay.

Perhaps it is the peculiar ſtructure of the gums, perhaps the proximity of the bone, that gives this malignant complexion to theſe tumors; for I have had many occaſions of remarking a ſingular contraſt betwixt the malignity of theſe, and their ſudden growth, after an imperfect operation; and the indolent nature of thoſe of the rectum, though very awkwardly and imperfectly extirpated. Sometimes, though rarely, I have found long tumors, like polypi, depending from the walls of the rectum, protruding every time the patient went to ſtool; and creating incon-

Stewart is rather afraid to uſe the corroſive ſublimate, may I beg you will have the goodneſs to direct us in your method of applying it (by return of poſt); in the mean time the cauſtic ſhall be continued."

"The little hare-lip patient is doing well; ſo is Mr. Roy, and Irons. The latter has not yet expoſed his eye to the light; Roy has, and the eyes ſtill look a little muddy, and the viſion is but imperfect. [This Gentleman has ſince perfectly recovered his ſight, reads and writes well and eaſily by candle-light.]

"I need hardly ſay how impatient we are for further inſtructions as to the management of Mr. Keil, and requeſt you will embrace the firſt leiſure moment you have to write me on the ſubject.

"I am, &c."

"Dear Sir,

"Since writing, we have attended minutely to the progreſs of Mr. Keil's complaint, and are extremely happy, that it is in our power to give a more favourable report, than could have been expected from the appearances eight days ago. The fungus, which threatened to ſprout about the angle of the jaw, has now diſappeared, and in the inſide of the jaw there is not the ſlighteſt threatening of any re-production of the ſpongy tumor. That part of the inſide of the cheek, from which the tumor was ſeparated in the operation, is ſmooth, and of a natural colour, although ſomewhat thickened, and hard. The external abſceſs remains almoſt in ſtatu quo, yielding upon preſſure a ſmall quantity of good pus through the old orifice. The abſceſs has a perfect reſemblance to that which frequently appears about the ſame part of the cheek, in conſequence of a carious tooth, or ſtump in the lower jaw; it is totally free of pain or itchineſs, his health and ſpirits are good, and, in the full confidence of recovery, his only anxiety ſeems to be, for the frequent application of cauſtic, on which he imagines the cure depends: he acknowledges the cauſtic produces ſome heat, and a ſlight degree of ſmarting.

"All the ſpace formerly occupied by the tumor being now ſound, except that part of the cheek which, in the inſide feels thickened but not ulcerated, we have been induced to think, that the application of cauſtic may be for ſome time ſuſpended; I have allowed him to go home for a few days, to-day or to-morrow: ſhould any ſuſpicious appearance occur, we ſhall immediately have recourſe to the cauſtic: in the mean time hope you will have the goodneſs to write, whether our preſent plan meets your approbation.

"I am, &c. PATRICK NIMMO."

ceivable irkſomeneſs and unnatural pain. Very often I find the folds of the integuments, where they are gathered and plaited at the opening of the gut, and the glands with which the rectum is ſurrounded, growing into ragged tumors; ſometimes of a prodigious ſize, fungous and looſe in their texture, ſwelling like a turkey's gills, when the patient ſtrained at ſtool, uſually concealed within the rectum, but ſometimes protruding partially. But theſe tumors, formidable as the annexed ſketches expreſs them, I have always found of a mild character, void of pain, attended only with irritation and a ſenſe of gravitation; but never ulcerated, ſeldom hemorrhagic, and bearing to be treated by every rough method, to be tied with ligatures, or extirpated with the knife, or deſtroyed by cauſtic, without returning.

The hiſtory of ſuch a diſeaſe has ſo little intereſting, ſo little variety of circumſtances, that even in the caſe of a friend, for whom I had a particular regard, I found, after many an anxious converſation, nothing to mark but what I have found in every caſe, viz. a tumor ſlowly forming, indiſtinctly perceived at firſt, long conceived to be merely an irritation, unwillingly recognized as a tumor, growing very ſlowly to that ſize which requires operation; protruding at each time of going to ſtool; but eaſily repreſſed with the finger, like a mere prolapſus of the rectum, and occaſioning, through many years, in which the patient was ſenſible of its exiſtence, no worſe ſymptom than irritation, and a ſenſe of gravitation.

" M. D. a young gentleman of about twenty-five years of age, had, if not from infancy, at leaſt from the earlieſt of his recollection, a tumor in the rectum, which, every time he went to ſtool deſcended, ſo as to leave a long continued teneſmus, with irkſome ſqueezings of the ſphincter, and frequent ſquirts of urine: but it was eaſily repreſſed with the fingers, after which the ſtrainings ceaſed. The tumor was not painful, but hemorrhages frequently burſt from it, though never to a great exceſs: it was manifeſtly of great length. The head or bulky and dependent part of the tumor is extremely firm, and bolts out before the fœces at each time of going to ſtool; the ſtalk or pedicle, is four inches long, not that its origin is that far from the opening of the rectum; for the neck is lax and fleſhy, and lies, after being puſhed back within the gut, in ſomewhat of a coiled or convoluted form: when the finger, being paſſed into the rectum, is laid along the tumor, a large nutritious artery is felt, diſtinctly running the whole length of the tumor, and beating along the whole length of the finger, juſt as the artery of the teſticle is felt running along the ſpermatic cord; a circumſtance, which makes it, if not neceſſary, at leaſt de-

ſirable, to kill the tumor, by a ligature applied at its root, and cloſe as may be to the walls of the rectum.

" I know no diſappointment ſo provoking, no ſenſe of awkwardneſs ſo irritating, as that of miſcarrying in an operation ſo ſeemingly ſimple as this: yet I confeſs my ſenſe of awkwardneſs, and want of adroitneſs, was very unpleaſant to me. I confidently expected to apply a nooſe, with Levret's tube, or what is equivalent, the eyed-probe repreſented among the inſtruments for polypus; and it is my duty to make this confeſſion to you, that I endeavoured in vain to apply the ligature, by this ſimple operation, to the root of the polypus, and kept my young friend long under an irritating operation, in a painful poſture. But on theſe occaſions, I have by me wires, probes, and eyed-needles of all ſhapes: I abandoned the intention of ſlipping the nooſe thus over the pedicle of the tumor: I threaded a long-eyed needle, mounted on a ſtalk, with a ligature of waxed thread; I paſſed into the rectum a lithotomy conductor, or blunt gorget, filled with cork in its concavity, and introducing the needle, and ſtriking it through the root of the tumor, very cloſe to the walls of the rectum, I with a common hook, run along the face of the cork, picked out the ligature from the eye of the hook, (a hook like that is uſed in aneuriſm of the thigh or ham,) drew it down, and brought it out by the anus, and turning it over the knob, or bulky lower-part of the tumor, retracted it ſo as to make the loop ſtrangle the tumor, which dropt off in a few days."

I think you will find it uſeful, on future occaſions of this nature, to conſider the ſlight plan which I etched with the pen, in my caſe-book, to help my own recollections, of which No. 37. is the fac ſimile: it repreſents a ſection of the rectum, and an actual drawing of the tumor; (a a) expreſſes the thick and muſcular walls of the rectum; (b b) the contents of the rectum, which, notwithſtanding the previous purging of the inteſtines, I could diſtinguiſh; (c c) the cavity of the rectum, (d) the knobular head, or moſt dependent part of the tumor, very firm, watry, and irregular, with a tuberculated and bleeding ſurface: this part alone projects on going to ſtool, and is repreſſed with the finger; the neck (d) is altogether different, being ſoft, fleſhy, of great length, conical, increaſing in bulk as it approaches the head or bulb; ſmall, though by no means delicate, where it has its origin in the rectum; it comes off from the walls of the rectum obliquely, the artery runs within it, zig zag, in the form (e e): the nooſe of the ligature, after being ſtruck through its root with the eyed aneuriſmal needle, was turned over the tumor, and drawn up on its nich, in the manner pointed out by the letter (f).

But watry and yet very bulky and protuberant tumors, encircling the whole verge of the anus, correſponding in their form, viz. three, four, or five tubercles, with the great lurks or folds of ſkin, are infinitely more frequent than tumors within the gut. Thoſe tumors of the verge of the anus, though bearing the moſt formidable aſpect, rarely degenerate into cancer of the rectum, except in extreme old age, and when irritated, neglected, or diſregarded. But if any thing can incline the diſeaſe to cancer, or make it alarming, it is the imperfect extirpation of it, or an ungainly attempt to kill it with ligature. Among other varieties of this tumor, I repreſented in the ſketch No. 28, one which, after being imperfectly extirpated, grew again in a few months to twice its original ſize; after this ſecond growth, the ſurgeon, more anxious and more timid from his ill ſucceſs, applied ligatures, by which, far from having ſtrangled or killed, he irritated and inflamed them: they had ſuddenly increaſed in ſize, and he was not a little alarmed, and doubtful whether to draw the ligatures firmer, or to extirpate the whole with the knife. The ſubject was a very hale and vigorous young man, in the prime of life; though the baſis of the tumor was very hard, and the tumors themſelves towered to a great height, I found all the verge of the anus, down to the very circle from whence they aroſe, ſoft, limber, and natural, as if no ſuch diſeaſe were even in its vicinity. With three or four ſtrokes of the biſtoury I extirpated the whole, and cleared the verge of the anus entirely of diſeaſe, or the ſeeds of it, ſo that the young man continues now in perfect health; but to do this, I ſpared nothing; I pulled each tumor out with all the ſtrength of my finger and thumb, and cut out along with it that part of the verge of the anus that belonged to it, muſcular as as well as cutaneous; to whatever depth the hardneſs extended I cut, introducing the biſtoury quite within the circle of the anus. Conſcious that if the operation ſhould prove again unſucceſsful, the lad could not eſcape a miſerable death, I cut away the whole circle of the anus, and have ſo often cut away the whole, or much of the circle, without the ſlighteſt ill conſequence, that I cannot but admire the ſtory related in Keill's Anatomy, which, when I was a boy ſtruck me with ſo much horror; where, in ſpeaking of the verge of the anus, the caſe is related of one, who having the whole circle of the anus extirpated for piles, I believe, had the anus ſo conſtricted, that he could never after paſs hardened fœces, nor go to ſtool without a glyſter.

Wherever it becomes neceſſary to extirpate the whole circle of the anus, I have found it ſafe: the neceſſity of the caſe would vindicate us; but experience of the

little inconvenience it produces entirely reconciles us. The ſketch No. 29. is that of a tumor of prodigious volume, which rolled out lump after lump, every time the patient choſe to ſqueeze it down, and ſtill left great rolls within the rectum, which could be hooked out with the fingers, as you would hook out a poney's tongue from its mouth, when preparing to give it a drench. From ſuch a voluminous tumor as this ſketch repreſents, you may imagine the diſtreſs this poor creature ſuffered. He was by natural growth, a big, ſtrong, and clowniſh fellow; by continual feeling of ſickneſs and diſeaſe, he was become ſallow, and meagre; and by frequent, I may ſay inceſſant, diarrhœa, he was greatly reduced in ſtrength. The ſenſe of preſſure was inſeparable from this enormous tumor, whether reduced or protuberant; and this teneſmus and ſtraining ſo inceſſant, that twenty times in a day a preſſure, which he could not reſtrain, puſhed it out; you may eaſily imagine, what unceaſing feelings he muſt have ſuffered, when ſo voluminous a tumor was repreſſed within the gut.

Yet the character of the tumor was ſingular, in being attended with not the ſlighteſt pain, not a ſpeck of ulceration, and little hemorrhagy; it was ſoft, woolly, lubricous, and of a ſhining red like velvet, and as ſmooth, except in its extreme edges, which were toothed, and ſcolloped, like a cock's comb. The whole maſs of tumor might meaſure about thirty inches in circumference; it belonged to the circle of the verge of the anus in ſuch a manner, that that circle was the root of the diſeaſe, and the tumor could not be extirpated without the whole circle being cut out: and it was ſo compreſſible, that when you thruſt the fore and mid fingers through the center of the maſs, into the rectum, your knuckles, and almoſt your hand, were buried in the tumor; the tumor receding on each ſide, and allowing you to penetrate as deep with your fingers, as if there had been no ſuch diſeaſe, and you had the conſolation to feel from within, that the verge of the anus, a very little way within the circle, was entirely free. This tumor, by far the largeſt I have ever ſeen, was extirpated by ligatures, driven through the verge of the rectum, with a common embowelling needle, paſſing it alternately from within outwards, and tying each ſtitch, or round, as firmly as the biggeſt waxed ligature could bear to be drawn. The whole operation was completed at once; the whole of the tumor faded and died at once; the patient was entirely and perfectly delivered of his diſeaſe; and the circle of the anus was entirely extirpated, the patient never complained, nor even ſuſpected the ſlighteſt inconvenience.

You remember that I do not profeſs to follow any perfect order; yet, if I did, I know none more natural than to arrange with tumors of the gums thoſe of the cheek; or to compare the diſeaſes of adjacent parts, eſpecially where their conſtitution, form, ſurface, and internal texture, their glands, exhalents, and other apparatus of ſecretion, in ſhort, their entire ſtructure is ſimilar; and where by a very allowable inference, their diſeaſes may be expected to be allied. So it is, I believe, with the cheeks and the gums, where the ſchirrous indurations of the early, and the cancerous excreſcences and fungi of the latter ſtages, are ſo extremely ſimilar, and where there are but a few ſpecial differences, which are eaſily deſcribed.

The cheek is a part where no conſpicuous gland, (the parotid and the ſocia parotidis excepted,) are known to exiſt; and yet the tumors I am now to deſcribe, are plainly not diſeaſes of cellular ſubſtance, nor of the ſecreting ſurface, but aſſume very early, and always before they arrive at ulceration, a knobulated and glandular form; where, the firſt knot or kernel is plainly glandular, and where the tumor, when it becomes irregular, and threatens cancer, plainly is ſo, being irregular, by the ſpreading of the diſeaſe from gland to gland. I know no diſeaſe which I ſtand more in awe of, and chiefly I fear it from theſe conſiderations, that it is rarely mild or ſtationary, almoſt always progreſſive towards ſomething more alarming; and either the tumor is ſeated ſo much in the center of the cheek, and ſo adheres to the inſide membrane, as to make it difficult to extirpate it, for fear of making a large opening there; or by being ſeated further back, is ſo entangled with important veſſels and nerves, as to make the extirpation a matter too critical to be attempted lightly. This is a diſeaſe of the moſt inſidious nature, ſo ſlow in its growth that we are, from its long duration, diverted from any ſenſe of danger: I have known it exiſt for twenty years, and even from infancy, without aſſuming a threatening aſpect; when all at once, without any ſenſible cauſe, it has ſhown its malignant nature. While you are encouraging your friend or patient with hopes, that the tumor, which he cannot but think of at times with apprehenſion, is mild in its nature, it grows ſuddenly hard, reddens, ulcerates, and becomes cancerous. Or when you have extirpated the tumor, and diſmiſſed your patient, confident in his ſound condition, and ſelf-contented in reſpect to what you have done, when you have long forgotten the operation, and the patient, and can hardly prevail with yourſelf to believe that a diſeaſe ſo extirpated can return, letters come, announcing to you that it has grown again. Various inexpreſſible circumſtances, of conſiſtence, colour, and form, intimate to the ſurgeon the lurking danger.

The tumors which I moſt dread, are theſe ſeated in the center of the cheek, deep within its ſubſtance, connected at once with the inſide membrane, and with the ſkin, not moveable, firm, glandular, hard in their general ſubſtance, and irregular in their form, knobulated, and having, as a ſort of center ſome one or more globular maſſes, alſo very firm, but which, in place of being hard, have a ſort of elaſticity which gives the conception of their having cartilaginous walls of extreme thickneſs, containing a ſmall proportion of gelatinous matter. And in truth it is ſo; theſe central globes are found uſually to contain a gelatinous fluid; but ſometimes, nay frequently, a thick and gelatinous blood, partly clotted, partly fluid. Such a tumor is extremely ſlow in its growth, but is ſtill growing; little painful, but yet communicating a general ſenſe of tooth-achy pain, or ſhooting; ſenſibly aggravated in moiſt weather, or eaſt winds; and it is uſually covered with a coarſe and granulated ſkin, very thick and porous, like that of a lemon, firmly attached, in a conſiderable extent, to the ſurface of the tumor, and incorporated, as it were, with the ſubſtance of it; this adheſion of the ſkin is ever a ſign of danger.

Of ſuch tumors, I ſhall lay before you various examples, not uninſtructive, with operations ſometimes fortunate, ſometimes unſucceſsful: nor ſhall I be ſo unmanly as to conceal from you the caſes in which I have been unfortunate, eſpecially where the ill ſucceſs may be imputed to any want of ſkill or conduct, for every ſuch avowal muſt be invaluable to you. No man can be always wiſe, nor always fortunate; he who pretends to unvaried ſucceſs, is either a knave or a fool. I take eſpecially pleaſure in laying before you a caſe where this ſpecies of tumor was ſtrongly characterized; where it exiſted perhaps from birth, certainly from early childhood; where the operations were ſuch as I could not enter upon without reluctance, nor perform without encountering various difficulties. In the firſt, I fear, a ſlight fault on my part proved the occaſion of great pain, and danger to my patient, of a weary journey, and a ſecond operation; the recollection of which, though painful to me, may be uſeful to you; and this I feel to be the ſureſt way of reſtoring myſelf to placid and approving thoughts.

"Mr. Taylor, a tall and ſlender, but ſtrong and active man, not exceeding thirty years of age, was afflicted with a tumor, which had indeed exiſted from his earlieſt years, but had increaſed lately with alarming rapidity; aſſuming, at the ſame time, ſo malignant an aſpect, that all thoſe whom he conſulted declared it dangerous, wiſhed that it might be extirpated, but declined performing an operation, attended



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SKETCH OF Mr. TAYLORS No. 1.

Drawn by J. Bell.

Engraved by E. Mitchell.

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with ſo many difficulties. In this diſturbed and agitated ſtate of mind, he travelled from a remote part of Ireland to commit himſelf to my care. The indolence of this tumor from childhood upwards, its ſudden increaſe of growth, from imprudent and violent exertions, its hard irregular form, the coarſe and porous ſkin with which it was covered, the firmneſs with which it adhered to either ſurface, viz. to the ſkin of the cheek, and to the membrane of the mouth; the redneſs it contracted, and the ſhooting pains which began, towards the latter ſtage of the diſeaſe; the manner alſo in which it was conſolidated into one ſubſtance with the whole cheek, and the apparent impoſſibility of extirpating it without cutting actually the cheek itſelf away, were circumſtances particularly worthy of attention. This tumor, he was well aſſured, had exiſted, if not from his birth, at leaſt from his early infancy, in the form of a ſmall, firm, kernelly tubercle, ſeated within the ſubſtance of the cheek, not far from the angle of the noſe; nor can he recollect, during all the period of his youth, or manhood, any circumſtance, either of pain, ſwelling, or change of colour, which called his attention to this tumor, much leſs alarmed him. He had arrived at his thirtieth year, when ſuddenly, in conſequence, of violent exerciſe, in very ſultry weather, and in the open air, he obſerved, firſt, ſlight and tranſitory pains in the tumor; but ſuch as never ſhould have alarmed him, had he not been wakened from this ſupine and unreflecting ſtate of mind, by a manifeſt and ſudden increaſe of ſize. Then he thought of rubbing the part with mercurial ointment, and applied to his brother, who is of our profeſſion, for his advice *. Then, for the firſt time, he began to feel all the unhappineſs of a man

* The following is a hiſtory, as nearly as I can recollect, of the tumor which Doctor John Bell lately removed.

I have had this tumor ſince my infancy; from what cauſe it originally aroſe, I do not remember. It was ſeated about the centre of my cheek, a very little below the end of my noſe; about the ſize of a ſmall hazel nut; it appeared always to be fixed in the centre of the fleſh, as it only moved in conjunction with the cheek; it never was any inconvenience to me, nor did I ever find any pain from it, nor any perceptible alteration, either in colour or ſize, until ſome time in September 1800: when, after a very hot ſummer, and unuſual violent exertion out of doors, I perceived a feeling rather painful; but took no further notice of it for two or three months; at which time the increaſed ſize of the tumor began to alarm me. I then began to uſe mercurial ointment by friction, I continued this proceſs for three weeks, but ſaw no good conſequence reſult from it. I then, for the firſt time, applied to my brother, who is a ſurgeon; he examined the tumor, and thought an operation would be too hazardous: I then, by his advice, applied a mercurial plaſter, which I kept on by renewal for three months; but ſeeing no benefit, I diſcontinued the uſe of it. I next let Doctor Collins of Cookſtown ſee it; he was alſo of opinion that the

in danger of cancer, and doubtful whether even the ſevereſt operation could afford him relief; and with all the agitation of one occupied with ſuch diſmal reflections, he

tumor was too large, and ſeated in too dangerous a part, for to riſk the conſequences of an operation. Five months had now elapſed, from the time of its beginning to increaſe, in the courſe of which time the tumor had got more than twice its original ſize. I next let Doctor Henry, (a man who is reputed to be a very eminent operating ſurgeon,) ſee the tumor: he thought it ought to be removed by the knife; but at the ſame time, thought the operation ſo dangerous, as made it prudent to try what virtue there might be in a courſe of palliative medicine. He therefore ordered me to drink the quantity of an Engliſh half pint, thrice a day, of the decoction of ſweet woods; to which draught, night and morning, I was to add 15 drops of the alterative drops. This I followed for ſome time, without receiving any benefit whatever. In the mean time the tumor had increaſed, by different round lumps all over the original tumor, to four times its original ſize. The pain began now to get ſomething more ſevere, ſo that I was obliged to wear ſoft flannel conſtantly next the affected part. At the approach of damp weather, or on being expoſed much to cold air, the tumor got unuſually warm, with a ſhooting or darting pain. That part of the tumor which was on the way of increaſing its ſize, was always, during the growth, attended with heat and ſhooting pain. About ſix months from its beginning to increaſe, there grew through my cheek, oppoſite to my mouth, a claw or horn nearly half an inch long; this claw, after I arrived in Scotland, by ſome accident, when ſleeping, was cut by my teeth, I ſuppoſe, and there was a little blood, of a fœtid ſmell, came from it, which reduced this claw to one half the ſize. I again ſent for Doctor Henry, who engaged to perform the operation; but expreſſed ſome little doubts, with reſpect to the conſequences of cutting a ſmall blood-veſſel, which he ſaid came through the cheek-bone, under the eye; he ſaid there was a danger of this artery retracting before it could be taken up. This declaration from a man whom I conſidered to be ſo bold, and eminent an operator, diſcouraged me a good deal, but ſtill more ſo by his aſſerting it to be a cancer. I next went to a Mr. Davis in Drogheda, near Dublin, a very old and reſpectable Gentleman, who had acquired much reputation by curing cancers, which he did by plaſters; he ſaid it was a cancer, but as it was not an ulcerated one, he could do nothing for me; but adviſed me to go to Edinburgh, and have it taken out by inciſion. I next went to a Doctor Daniel, who is ſurgeon to the county of Armagh infirmary; a Gentleman who has acquired a conſiderable reputation as an operating ſurgeon; his advice was, that I ſhould loſe no time in going to Edinburgh, where, he had no doubt but the tumor would be removed with ſucceſs. I next ſhowed the tumor to Doctor Collins, who is ſurgeon to the garriſon of Charlemont, in the county of Armagh; his advice was for me to go to Edinburgh, and to put myſelf under the particular care of Mr. John Bell, ſurgeon. At this time nine months had elapſed from its beginning to increaſe; and the tumor had made its way through my cheek, in the form of two haſel nuts, and adhered a little to my gum above the teeth. The tumor was now through in three different parts, viz. the ſmall claw which was oppoſite to my mouth; and the two globular lumps, which, about the ninth month began to adhere to my upper gum. Seeing now my ſituation to be ſo very unpleaſant, I concluded that there ought to be no time loſt, and was determined to ſubmit to Doctor Henry, as an operator, notwithſtanding his own timidity in the caſe; but was adviſed by my friends to ſhew the tumor to Doctor Caldwell; who is moſt certainly reputed the firſt phyſician in the kingdom; his opinion was, that an operation would be too hazardous, on account of the ſize of the

conſulted every one who was acceſſible to him, and ſtill as he paſſed through the country ſought new counſel, and every where he had the unhappineſs to find, that his diſeaſe was regarded as deſperate, and the operation as barely practicable. He conſulted firſt his brother, who, far from concealing his danger, told him how doubtful the iſſue of an operation was, counſelled him againſt it, and adviſed him, that he ſhould apply mercurial plaſters: next he conſulted Dr. Collins, who declared the tumor too large, and the part too particular to admit of operation. Next, Dr. Henry, a Gentleman reputed a good and bold operator, who wiſhed it were removed, propoſed the operation, continued to talk about it, but declined performing it; and far from denying the danger of ſuch a ſtep, adviſed that Mr. Taylor ſhould firſt try the effects of the decoction of woods, with corroſive ſublimate, in gentle doſes.

" Six months had now elapſed, from the time of this conſpicuous increaſe of ſize; the tumor had attained to more than twice its original bulk; there had been an accretion of many leſſer lumps to the main body of the tumor; and before the courſe recommended by Dr. Henry, in little more indeed than three weeks, the tumor had increaſed to four times its original ſize, the pains were become more pointed and frequent, he was obliged to be careful of it, and preſerve it like a part affected with tooth-ach or rheumatiſm, from cold, and the viciſſitudes of the air; and in damp weather or ſevere cold, he was tortured with pungent heat and ſhooting pains, the heat and ſhooting pains being peculiarly felt in that part of the tumor which was moſt conſpicuouſly increaſing in ſize.

" But if thoſe ſhooting pains, and this ſudden increaſe of ſize were ominous, the change which next enſued was more perplexing, and alarming; for on its internal ſurface, it began to connect itſelf not only with the inſide ſurface of the cheek,

tumor, which now had got to ſix times its original ſize; and alſo on account of the parts in which it was ſituated; he believed it was not a cancer, and ordered me a decoction of ſweet woods, and mercury, which I uſed for ſome time without any good effect. It was then Doctor Caldwell's opinion, that I ſhould go to Edinburgh, giving me to know, at the ſame time, that he was in ſome doubts, that I would come home with the tumor in my cheek; but obſerved, that it would at leaſt be ſatisfactory for me to have the opinions of ſo able ſurgeons and phyſicians as were to be found at Edinburgh. I commenced my journey for Edinburgh on the 21ſt day of July 1801, and, from different cauſes and delays, did not arrive at Edinburgh until Thurſday the 13th of Auguſt, during which time, (perhaps with the fatigue of the journey,) the tumor had increaſed conſiderably, and had a more threatening appearance than it ever had before. Next day I went to Mr. John Bell, who, without any heſitation, undertook the operation, and performed it in a manner that has done me the moſt invaluable ſervice.

but with the ſubſtance of the gums: an irregular excreſcence projected into his mouth, which he compared with a claw or horn, and of ſuch length and bulk, that, being checked by the teeth during ſleep, it was torn away with a conſiderable effuſion of black and fœtid blood. On the external ſurface of the cheek, the ſkin thickened, became porous and coarſe, adhered to almoſt the whole extent of the tumor, was puckered and purſed up, at the place where the leſſer glandular lumps were grouped and knotted round the chief body of the tumor, which was very nearly in the center of the cheek.

"Alarmed by ſuch deciſive changes in the character of the tumor, he delayed not a moment to call Dr. Henry, who promiſed to perform the operation, and expreſſed reluctance only on account of certain blood-veſſels, eſpecially of the infra-orbitary nerve and artery, which he feared would retire into their hole under the cheek bone, before the artery could be ſecured. This diſcouraging ſuggeſtion, and an expreſs declaration that the tumor was of a ſchirrous nature, induced Mr. Taylor to travel on to Mr. Davies in Drogheda, a Gentleman reputed ſucceſsful in the cure of cancer: but, though he acknowledged this to be a cancer, as it was not yet ulcerated, he declined applying his remedies, and adviſed him to travel on to Edinburgh and have it extirpated. It is not to be told the variety of ſurgeons to whom he reſorted, to Dr. Daniel, Dr. Collins of Charlemont, and Dr. Caldwell; and, at every ſtep of this pilgrimage, he was told of the danger of the diſeaſe, of the difficulty of the operation, and the prudence of coming directly to this city.

"I might, without indelicacy, ſubmit to you his own narrative; for any accidental compliments to my profeſſional talents which it contains are ſuch as are addreſſed by every patient in theſe difficult circumſtances to every ſurgeon, whoſe kindneſs has inſpired confidence, or on whoſe profeſſional talents he imagines he may rely: but I ſhall be more uſefully employed in deſcribing the tumor I had to extirpate, the peculiar characters of malignity which made the operation neceſſary, and the peculiar circumſtances of place, form, and connection, which made the enterpriſe difficult.

"My patient was of a pale complexion and melancholy temperament, and, after a journey ſo cheerleſs and inauſpicious, where he was told at every ſtep the danger of this diſeaſe, and the difficulty of that operation from which alone he could expect relief, he was too unhappy and dejected to receive any conſolation from my aſſurances. The tumor was not of that ſize to be eſteemed monſtrous in any glandular or fleſhy part, but it was great in proportion to the part in which it was ſeated, it

SKETCH N° 29



Drawn by J. Bell.

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Engr.d by E. Mitchell.

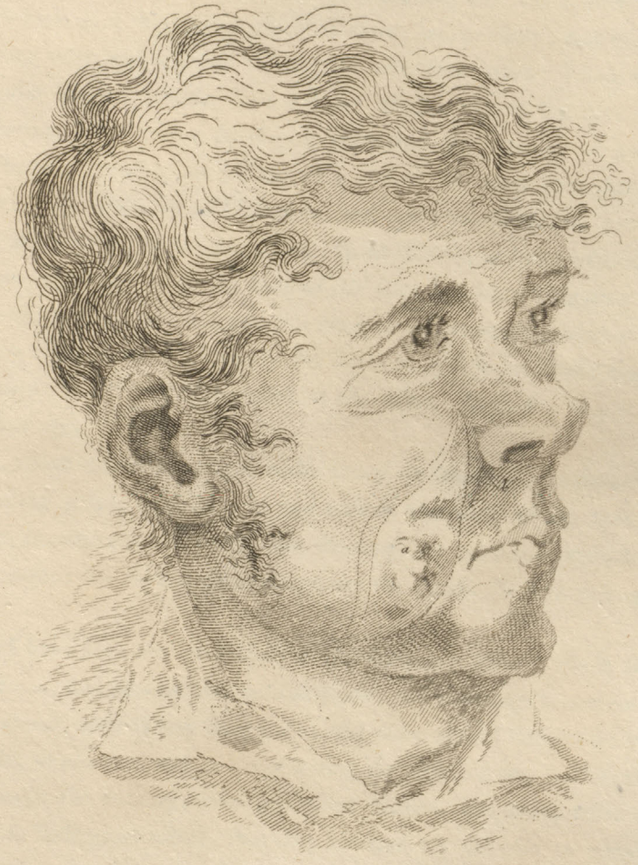
was of the form repreſented in the ſketch, Plate i. of a ſtony hardneſs, firmly connected with the ſubſtance of the cheek, of a globular form, and ſurrounded by ſmall ſubſidiary tumors, ſeemingly of a glandular nature, firmly condenſed and mixed in their ſubſtance with the main tumor and with the ſubſtance of the cheek. The ſkin was thick, with gaping pores, a coarſe granulated texture, and a very firm adheſion to all the tumor, except its very apex; and, in the center of this granulated ſkin were livid tubercles, about the ſize of a boy's marble, extremely hard in their ſubſtance, and of a very ominous appearance; and where theſe projected a little below the center of the cheek, the ſkin was puckered and drawn in. While the external ſurface was thus connected with the ſkin of the cheek, ſo as to draw the angle of the mouth obliquely upwards, the internal ſurface was very dangerouſly attached, not only to the inner ſurface of the cheek, but to the gums: the inner ſurface of the cheek felt, upon introducing the finger, tuberculous, and rugged, and extremely hard; and the tumors, when felt from within, appeared diſtinctly to be the ſame indurated ſchirrous ſubſtance which projected from the external ſubſtance. Upon inverting the cheek, theſe tubercles were ſeen knotty, irregular, and rugged like piles, or like thoſe venereal warts of the anus, which are termed fici. Where this diſeaſed ſubſtance approached the angle of the noſe, it adhered very firmly to ſimilar tubercles ſpringing from the gums, and the ſhooting pains, now ſevere and conſtant, together with the dejected appearance, and ſallow complexion of Mr. Taylor, joined to the united opinion of many of our profeſſion, could not fail to impreſs me with a confirmed apprehenſion of its malignity; but that only inſpired me with a greater deſire to give him the only chance of life.

"In reſpect to the projected operation, no circumſtances could be more diſcouraging than thoſe I have juſt deſcribed: I was conſcious that, in attempting to ſave him, I muſt not merely extirpate a tumor by nice diſſection, but cut through the cheek and diſſect away almoſt all its ſubſtance; that I muſt divide the facial artery below, and the tranſverſalis faciei coming from the temple, and the labial artery returning from the lip; that I muſt not merely wound, but cut away the ſalivary duct, and lay the whole ſide of the face open, making a breach larger than the mouth: it could not but ſeem problematical, whether, after ſuch an operation, the ſaliva, or food, could ever be retained again, whether the attempt would not involve me in diſgrace, whether I ſhould not be blamed deeply for adventuring on that operation which ſo many had declined. But I was emboldened by this recollection,

that, often by a grape-ſhot, or by a ſplinter in battle at ſea, the whole cheek is carried away, and ſloughing ſucceeds to immediate loſs of ſubſtance; that I had every reaſon to believe, though much of the ſubſtance of the cheek muſt be cut away, I ſhould be able to bring together the remaining ſkin of the cheek; I moſt of all conſidered that this Gentleman had travelled from a diſtant country, and, leaving behind many ſkilful and dextrous ſurgeons, came to commit himſelf with reſignation and confidence into my hands, that I owed him ſome ſacrifices in return, and that, unleſs I attempted to ſave him, he muſt, at no remote period, die of cancer; I, therefore, ſketched the plans which I am next to explain to you, and prepared myſelf for the operation."

The hooks, knives, and forceps neceſſary for ſuch a diſſection being properly diſpoſed, with needles for tying the arteries, I proceeded with an operation which could not fail to be extremely ſlow, ſince its principal purpoſe was to diſſect out the whole diſeaſe, and ſave as much as poſſible the ſound parts. The form of the inciſion is explained by the dotted line in the ſketch, Figure 3. where (a) marks the tuberculous and diſcoloured part of the tumor; (b) the part approaching to the angle of the noſe, where the tumor adhered firmly to the gums within, and the dotted line deſignates the oval form of that inciſion, by which I cut clean away whatever ſeemed dangerous of the thickened ſkin, or tubercles connected with it, abridging thus unavoidably, the portion of the integuments deſtined to replace, or, at leaſt, to cloſe that opening, made by cutting away the body of the tumor, and of courſe the ſubſtance of the cheek. I drew my kniſe in the direction of that line of feature which marks the levator oris, and ſurrounded the tumor with a ſecond inciſion like the firſt; but, approaching very cloſely the angle of the mouth, I proceeded to diſſect away the tumor from it, and from the jaw-bone, and thought it ſingular, that the labial artery where it approaches the lip, and the facial artery where it turns over the angle of the jaw, were ſo elongated without being divided, that I ſlipt a ligature under each of them with the needle, without pricking even the cellular ſubſtance, and tied them before cutting them acroſs.

Having turned the tumor upwards, I cut through the inſide membrane of the mouth, cut ſheer and clean away the tuberculous prominences of the gum, diſſected upwards towards the eye; and, when much of the tumor was detached, regarding the infra-orbitary nerve as the moſt important and painful part of the diſſection, I reſerved this as the laſt ſtroke, and, while I diſſected this part, and



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SKETCH OF Mr TAYLORS HEAD Nº III.

Drawn by J. Bell.

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eſpecially when I cut the nerve acroſs, he ſuffered an intenſity of pain which made him quite ſavage, it was then only that he ſtampt with his feet and cried out in agony *.

* I have always obſerved that the cutting acroſs a nerve produces an inconceivable ſhock, and of this nerve eſpecially a dreadful pain, which is on no occaſion ſo manifeſt, as when the operation of cutting acroſs the nerve for the cure of the tic douleureux is performed; for then the cutting acroſs the nerve is complicated with no other inciſions to confound the ſenſation, which is at once ſo peculiar, and ſo alarming, that the patient feels as if ſhot, and ſtarts up in agony inexpreſſible; and this firſt ſenſation is inſtantly followed by a pleaſing calm, and a happy and perfect relief from pain. Thoſe whom I have ſeen labouring under this ſingular nervous diſeaſe, have had the affected ſide of the face reddened, the cheek convulſed, the lip quivering, and the eyes filled with tears from the intenſity of pain. One old man, about 70 years of age, who was cured in an inſtant of a diſeaſe of many years duration, by my worthy and much reſpected friend Mr. Harriſon of Ulverſton, had this convulſion, and trembling of every feature, in a ſingular degree. Another old Gentleman, Capt. G. of R——, in Inverneſshire, had this inceſſant trembling of every feature, as if each muſcular fibre of the face had been ſtruggling in an indetermined condition, betwixt convulſion and paralyſis; and this convulſion was accompanied with ſuch agonizing pains, and wild and piercing cries, as actually alarmed the ſtreet in which he lived: but I ſhall deſcribe his condition in his own words, as dictated to my aſſiſtant Mr. Allan: Capt. G. was, at the period of the operation, about 75 years of age.

"One afternoon, about eleven years ago, while ſitting at dinner, I was ſuddenly and ſeverely attacked with ſharp and thrilling pains, beginning at the root of the wing of the noſe, extending all over the right ſide of the face, centering in the cheek, but ſhooting in a particular manner upwards by the corner of the eye into the temple: the fit was momentary, but the cheek, the lips, and eyelids quivered and were convulſed.

"From this time I have been always ſubject to this torturing diſeaſe, which has been the occaſion of various journies to town, and innumerable conſultations: my ſufferings ſometimes intermitted for weeks, during which I was almoſt entirely free from pain; and often again I ſuffered ſix or ſeven ſevere paroxyſms of convulſion and pain, in one day, and as many during the night: I was for two years contented with the advice of my ſurgeons in the country, who preſcribed bliſters, and many other applications both ſevere and trivial, but with ſo little good effect, that they aſcribed my diſorder to worms in the cavity of the upper jaw. About two years after the firſt attack, my diſeaſe aſſumed a more determined form, and returned in paroxyſms with a degree of regularity: after a lapſe of two or three months, it would return for an equal period, and continue to torture me, ſo that my appetite and ſleep left me, my memory even ſeemed affected, and my general health ſuffered.

"About four years ago I came to Edinburgh, and put myſelf under the care of a ſurgeon of diſtinguiſhed reputation, conſulting, at the ſame time Dr. Gregory Grant; and, by their conjoined advice, I had the gums of my upper jaw ſcarified, and three or four of my grinders extracted; and, after remaining ſome weeks under their care, I returned home ſeemingly well, and felt nothing of my diſeaſe till about the third month, after the ſcarifying, and the extraction of my teeth, when ſuddenly it returned in all its violence, and continued to diſtract me for two years more.

It was removed, and before the next ſtep of the operation, the gap ſeemed horrible, even to me. The ſide of the face was open, the range of teeth in both jaws

" At the end of two years I was again driven to town by this diſtracting malady, and, having put myſelf under the care of the ſame Gentlemen, and, having called Dr. Monro into conſultation, he directed that the only remaining grinder on that ſide of the upper jaw ſhould be pulled, and I was then ſent home, but without the ſlighteſt alleviation of my diſorder, which I endured for two years longer.

" About three weeks ago I arrived in town a third time, and, after a very formal and numerous conſultation, it was reſolved, to try the expedient of cutting acroſs that nerve which paſſes under the eye to the face: my agonies were now ſo dreadful, and unremitting, that, often I was obliged to ſtart up from table, and could not refrain from cries and howling, ſuch as were but too diſtinctly heard in the ſtreets. The operation was accordingly performed by one of thoſe Gentlemen, who made the inciſion you ſee beneath the eye: for ſome time I flattered myſelf I had derived all the benefit that was promiſed me, and even when my pains returned, I was over-perſuaded that thoſe were the ſlight remains of a deſperate diſeaſe, and would be tranſient. In this perſuaſion I had, I may ſay, begun my journey; I had got into the poſt chaiſe which was to convey me from town, when I was ſeized with a paroxyſm ſo agonizing, ſo very dreadful, that I was carried back into the inn, and have now reſumed my place in lodgings, to commit myſelf to your care.

" April, 1804."

I doubt not the reaſon of the tic douleureux returning, is often like the ill ſucceſs of vaccine inoculation, to be aſcribed to the manner in which the operation is performed. The performing of this nice and delicate ſtroke of the knife was probably confided, in this caſe, to a Gentleman whoſe firſt and only diſſection of nerves had been in the *living ſubject*; his ill ſucceſs was ſufficient warrant for this concluſion; it was impoſſible for an anatomiſt to look at the ſcar of his inciſion, without an inſtant conviction, that it did not at all croſs the courſe of the infra-orbitary nerve; deceived by the baggy eye of a man advanced in years, and feeling only for the margin of the ſocket, he had carried a long inciſion in the direction of the natural lurk of the ſkin, and certainly could touch only the rim of the ſocket; it is far below this, that the nerve lies in a deep hollow: my education, and my experience, put me, I believe, far above the puerile vanity, and, I hope, above the ſuſpicion of magnifying beyond the truth, this trivial ſucceſs; I could not but know the infra-orbitary nerve a little better than my predeceſſor, and could not fail to cut it. I ſeated my patient in a chair, and, preſſing the point of my fore finger deep into the hollow where the nerve lies, cut it acroſs, by ſtriking in a ſmall ſharp-pointed knife, making no length of outward inciſion, and, hooking the point of the crooked biſtoury behind the nerve: in the very inſtant of the ſtroke by which it was divided, Capt. G— ſtarted from his ſeat, ran forwards in great confuſion, exclaiming, " Good God! what's that?" he ſat down inſtantly in perfect compoſure, free from pain, unconſcious of the operation being performed, and expecting it: when queſtioned about the ſenſation which made him ſtart up, he ſaid, he felt nothing but as if he had been ſhot in the head, followed by a momentary confuſion, and a total relief from pain. He ſaid he did not imagine the operation done, becauſe the firſt operation had been a deliberate diſſection; he felt now perfectly confident that he was cured, and returned home in two days, ſince which time, he has lived in perfect health, is happily married, and continues well at this moment.

quite expoſed, in ſpitting out the blood it iſſued through the cheek, and the tongue, when he turned it that way, paſſed through the opening, not through the mouth, but through the under opening of the cheek, ſo that my aſſiſtant found it right, to prevent the alarm of the patient, and decent in regard to the ſpectators, to purſe the parts together, and cover them with his hand: in ſhort, it was ſuch an appearance as you will willingly hide from yourſelf.

But it was a pleaſure to ſee how nicely the parts fell together, when ſmoothed down with the palm of the hand, and how little they were purſed when ſewed. I make it in all operations a rule, to let even the oozing of blood ceaſe before I lay the parts together; having allowed ſome time to elapſe, I proceeded thus: firſt, taking the edge of the buccinator muſcle, much of which I had ſaved in the diſſection, I raiſed it towards the cheek-bone, ſewed the edge of the muſcle, to the rags of the inſide membrane of the mouth, and to the ſtrong cellular and muſcular ſubſtance, under the moſt prominent part of the cheek-bone, and carrying the thread inwards and tying it on the inſide of the mouth, I there cut it quite ſhort, reſolving never to look after it, but leave it to ſuppurate out. Next, I paſſed a deep ſtitch through the upper part of the inciſion, where force was required to bring the parts in contact or to hold them ſo there; in the hollow, I meant to lay a ſoft and large compreſs. But the lower and central parts of the inciſion, where the flaps of ſkin were more eaſily approximated, I joined, by paſſing three delicate ſewing needles, as hare-lip pins, through ſeveral points of the wound: the intermediate points I drew nicely together with plaſters; I was careful to uſe the leaſt poſſible force; to make no ſtrain by the ſutures; to lay my compreſſes light and ſoft in the hollows; and to roll my bandage round the jaws very equally, and gently, for the teguments were moſt alarmingly thin, the ſlighteſt inflammation would have cauſed the whole cheek to ſlough, ſo as to leave the parts in a dreadful irremediable condition, with the ſaliva continually flowing over the cheek, the ſpeech imperfect, probably unintelligible, and the patient would have found no way of being nouriſhed, but by pouring the food down the throat, in place of maſticating or

I have only to obſerve, that thoſe Gentlemen who have the happineſs to be born operators, and to be endued with ſuch natural genius and talents as to be emancipated from the wearifome and diſguſting taſks of ſtudy and diſſection, though they are of courſe very ſucceſsful in amputating limbs, can not expect to be equally ſo when the queſtion is about dividing a nerve.

January, 1807.

ſwallowing it. Happily the ſkin adhered in a few days, the needles were withdrawn, in a fortnight he was cured.

But the ſlighteſt ſpeck or ſpot of imperfection in ſuch a work is followed by ſevere ſelf-reproach. I am not ſure that I obſerved my fault during the operation, but certainly after the cure, I took an alarm, far from groundleſs. I obſerved a ſmall glandular-like knob towards the lower part of the cheek, which I ingenuouſly warned him might be the ſource of future diſtreſs, as the ſmall tumor, indolent during his infancy and youth, had been ſuddenly the cauſe of this miſchief; I took his promiſe that he ſhould be obſervant of it.

This error, ſo oppoſite to my experience and conviction, ſo unlike my general maxims and conduct, I ſorely repented. It was at the diſtance of three years from the period of this operation, that I received a ſucceſſion of letters from my patient, announcing the return of the diſeaſe, and aſking permiſſion to come once more to this country, to put himſelf under my care. The ſmall glandular knob, which I required him to watch, had increaſed in ſize, and the gums alſo had begun again to ſhoot out ſmall tubercles; that the new ſwelling, and the return of the diſeaſe had begun in this ſmall glandular knot, no bigger than a pea. I remember, only from his converſation, not from his letters: from the complexion of theſe, one ſhould rather have concluded, that the new growth was only in the gum, beginning in the angle betwixt the gum and cheek, and in the center of the cheek; a part of the tumour, in the extirpation of which, I ſurely had not to accuſe myſelf of any fault *; and from the ſlighteſt and moſt imperceptible beginnings, viz. a

* "Sir, Cookſtown, County Tyrone, 9th October, 1803.

"It will be no doubt unpleaſant to you, as it is painful to me, to have once more to trouble you on the ſubject of my old complaint; the following is, as nearly as I diſcover the ſtate of my cheek at preſent.

"Above my teeth, on the outſide of my gum, as high as where the cheek and gum unites, there did appear, more than nine months ſince, a ſmall lump, about the ſize of a ſmall pea. It was not, however, attended with the lancing pains which I always found in the original tumor, but rather at the approach of damp weather, I found it tender and ſore. Soon after ſomething ſimilar made its appearance right over it, rather in the cheek, and appeared to preſs down on the firſt; this firſt ſoon after began to get leſs, and was ſoon reduced to its original ſmall ſize, at which it continues. The other continues, and is about the ſize of a hazel nut; has not got any thing larger for the laſt ſix weeks; is under the upper end of the original wound, appears outwardly growing from where the gum and cheek unites, and its upper ſide is concealed within the cheek, while the reſt appears fixed in the gum. This however is not to me the moſt alarming ſymptom. About the centre of the firſt long wound, there did, about nine months

ſmall longitudinal thickening along the ſcar of the wound, a ſmall pea-like hardening near the lower part of that ſcar, and a ſimilar hardening betwixt the cheek and gum; it grew with ſuch rapidity, that from week to week its increaſe was manifeſt, and in leſs than two years, it had attained fully its original ſize; accompanied with pains, more diſtinctly lancinating, more poignant, and frequent, than in its firſt ſtage. Again he travelled from Tyrone to this city, and after many perplexities and fears, ſubmitted again to the operation. I, on my part, had no ſlight motives for anxiety, for now actually the whole cheek, the ſkin excepted, was to be cut away; the buccinator muſcle, and the living membrane of the mouth, were both to be cut out; and I was ſhocked to think, how poſſible it was, how far from improbable, that the whole cheek, even from the ſlighteſt overſtraining of the future, or the ſlighteſt accidental fever, might gangrene and ſlough, and leave a horrible chaſm.

The drawing, No. 4. is a ſketch of this tumor, in the poſture in which Mr. Taylor often laid himſelf, and with his finger, as uſual, in the mouth, feeling the tubercles on the inner ſurface, and the diſeaſe of the gums. The tumor was almoſt

ſince appear, on handling, ſomething about the ſize of a pin's head, which has continued ſlowly to increaſe.

"Alſo, as far as the finger can ſtretch into the cheek, where the cheek and gum unite, but rather on the cheek, juſt under the projection of that part of the cheek-bone, which is neareſt to the eye, there is a lump of an oblong form, about the ſize of a hazel nut, but I do not obſerve it increaſing nor attended with any pain.

"The following is the moſt alarming ſymptom of all to me, from its now being in a ſtate I may ſay of weekly increaſing.—About ſix months ago there appeared, on fixing one finger on the inſide, and the other finger on the outſide of my cheek, ſomething like a lump, which however did not give me much uneaſineſs until lately; it at preſent ſeems to be rather of an oblong form, taking its direction towards the cheek bone; does not ſeem very hard to the feel, is not attended with very frequent lancing pains; the cheek on the outſide appears rather ſwollen, but not any thing diſcoloured; there is no protuberance either in or outſide as yet. I have found for ſix months paſt very frequently lancing pains in and about the original wound, not however confined to any particular place.—My dear Sir, all theſe threatening ſymptoms may not ſignify, but I conſidered it my duty at all events to communicate them to you. Mr. Joſeph Young, ſtudent, the bearer, who I made to examine my cheek, will if required perhaps further explain theſe apprehenſions, hoping you will have the goodneſs to write me, &c."

It was not till another ſeaſon, or rather I believe 16 months had elapſed, that the cauſe aroſe:—then I found not theſe indications of an incipient tumor, but the tumor fully formed, as large as at firſt, and far more unfavourably circumſtanced for any operation, not only by its numerous ſtrong adheſions to the gum, and its abſolute conſolidation with the ſubſtance of the cheek, but alſo by the great loſs of ſubſtance in the former operation.

as large as at firſt: the great glandular-looking ſubſtance, rounder and more uniform; the livid part of the ſurface of greater extent, and a ſtage nearer ulceration, and the ſcar of the former operation binding the tumor firmly along its whole length; and, except in the very apex of the moſt bulky and prominent part, where indeed it was more elaſtic, the whole was of a ſtony hardneſs, accompanied with perpetual pain, by which, together with his fatigues, and fears, in this wearifome journey, he was greatly caſt down. It now alſo approached ſo cloſe to the angle of the mouth, that I ſaw no way of extirpating the tumor, and leaving more than a quarter of an inch, hardly ſo much, entire, betwixt the gap made by the extirpation of the tumor and the mouth.

I proceeded to make firſt, a long inciſion, bending a little, ſo as to include all the tumor that was below the cicatrix, and which, in bending round the tumor almoſt touched the angle of the mouth (a), ſketch No. 5. next, a ſimilar inciſion (b), bending upwards, in ſuch a direction, as to include the ſcar of the former operation, the puckered and adhering ſkin (c), and a part of the tumor, all that part to which the ſkin inſeparably adhered. Thoſe two inciſions included that part of the adhering ſkin, which required to be extirpated, in the ſame manner, that we uſually include within an oval inciſion, the nipple of a much indurated mamma. Thirdly, I made a tranſverſe inciſion, from the temple, i. e. from the tip of the ear over the zygoma, directly acroſs the face, which meeting the firſt oval inciſion made two flaps. But it is only at (d) that the angle of this inciſion can be ſeen, its beginning is hidden by the projection of the tumor, and the two triangular flaps of ſkin diſſected up from the tumor are marked (e e). The tumor I found now more regular in its form than I expected, ſacculated, and very dark and bloody; I, after raiſing the angles of ſkin from the cheek and face, and ſaving all of the ſkin that I could ſave, diſſected all round the tumor, and reſerved thoſe parts of the diſſection for the laſt, in which I had to divide arteries. I then diſſected out the tumor from the angle of the mouth, and tied the labial artery; then diſſecting down through the angle (f), the loweſt part of the inciſion, into the cavity of the mouth, I tied there the trunk of the facial artery; and finally diſſecting out the tumor from under the cheek-bone, and tearing it from the zygoma, a moſt difficult and painful diſſection, I tied a large branch from the tranſverſalis faciei. The veins ſpouted out blood profuſely when cut, but ſhrunk inſtantly: The arteries thus ſucceſſively tied bled none. I never indeed performed ſo unſeemly an operation, ſo bloodleſs.



Page. 205.

SKETCH OF Mr TAYLORS TUMOR IV.

Drawn by J.Bell.

Engraved by E.Mitchell.

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SKETCH OF Mr TAYLORS HEAD Nº 5.

Drawn by J.Bell.

Engraved by E.Mitchell.

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Now obſerve, that in all theſe points, and to the full extent of the tumor, I was obliged to go fairly through the cheek, and cut every thing ſheer away, for it was all tumor. The tumor looked formidable when it preſented itſelf, in time of diſſection, high above the ſeparated flaps of ſkin, and the chaſm was horrible when it was cut away; the flaps conſiſting of ſkin only, were ſo thin, that I was in deſpair when I laid them together; I ſolemnly declare, that nothing ever aſtoniſhed me more, than the ſpeedy cure, which was ſuch as muſt give me courage on all occaſions that may in future occur. Firſt, my aſſiſtant, Mr. Allan, brought the edges nicely together, and paſſing a needle through the three points of the inciſions, I brought them all together in one ſtar-like center, exactly in the middle of the cheek. But one ligature, though it approaches two points nicely, cannot go under a third, and bring it into contact with the other two, without turning over and paſſing from within outwards; in conſequence of this awkwardneſs, for which I was provoked with myſelf, I had almoſt baulked the great purpoſe of re-union, and that too at the very center of all the ſutures, and therefore endangering each of them, and of courſe in the center of the cheek, ſo that the whole cheek was endangered: but fortunately the ſuppuration, in this central point, was very ſlight: yet however ſlight, it grieved me, as it plainly proceeded from my awkwardneſs. I then took the moſt delicate ſewing needles, mounted on ſmall wooden ſhafts, like pencil-ſticks, and paſſing two needles from ſide to ſide acroſs each long inciſion, I brought the ſides of the three radiated inciſions, into the niceſt contact imaginable, careful always not to twiſt my threads round the needles too tight; and I paſſed one very delicate needle cloſe to the angle of the mouth, to ſecure that point.

This I do on all occaſions, and always very deliberately, and at ſome diſtance of time after the operation, and when there is no longer any bleeding to diſcompoſe me; and every thing ſponged, clean, nice, and dry, I take narrow ſtrips of linen, and dipping them in warm glue, lay them acroſs the inciſions, and theſe being well dried, and hardened, and the needles kept clear of the glue, I can, without riſk, on the end of the ſecond day, or on the third, before there can be the ſlighteſt riſk of ſuppuration, ſlip out my needles one by one.

So I did in this caſe; the leſs neceſſary needles I withdrew on the ſecond day; thoſe on which more depended, I left till the third, and fourth days; and the needle neareſt the center I left longeſt. I draw each needle with nice forceps, turning it firſt a little vertically, that there may be no tugging. I often paſs a thread into

the eye of the needle, that I may pull quite vertically, and often paſs a flat ſtick betwixt the ends of this thread, and, twiſting the ends round the ſtick, turn the needle vertically, and ſo looſen it with ſo true a motion, that there is not the ſlighteſt ſenſible violence, nor the ſmalleſt drop of blood; and, before I attempt to move a needle, I take a hair pencil, and, by waſhing and cleaning the point, and oiling it, prepare it for paſſing eaſily. This method I have long uſed in all delicate ſutures, eſpecially in extirpating ſmall tumors of the face and jaws, and in hare-lips. It was in this manner I re-united, a ſecond time (the operation having been very mal-adroitly performed upon him when a boy,) the hare-lip of Mr. Whirter, ſurgeon, of Newcaſtle, with a ſcar hardly viſible, and with an evenneſs of lip which enables him to blow the flute very delicately. He was conſcious of the neceſſity of this ſecond operation, and gratified with the ſucceſs of it.

I have another remark to make to you, that, though a needle is withdrawn, its twiſted ſuture remains upon the ſurface, caked with blood, and is a ſecurity to the wound; and always, upon withdrawing each needle, I heat the glue-pot again, and, dipping a hair-pencil in it, I waſh the remaining ligature, or twiſted thread, with glue, ſo that the needles being removed on the ſecond, third, and fourth days, there are ſubſtituted to them various ſtrips of fine linen, with glue, and the pencil being carried over all parts of the inciſion, the whole is held firmly yet gently together, by a cake or plaſter of glue, which need not once be troubled till you find it ſafe to waſh off the whole at once.

This, compared with the common adheſive plaſter of wax, is a nice and cleanly manner of performing thoſe operations in which ſo much depends upon delicacy, and the nice and curious contact of all the edges; for any one point left open endangers the whole line of ſuture; and this method had, in the preſent inſtance, ſuch perfect ſucceſs, that, in ten days, Mr. Taylor began his journey to Ireland perfectly cured, and with leſs mark of inciſion, and a more perfect evenneſs of cheek than at firſt *. In an hoſpital, an unhealthy ſeaſon, or an unſound conſtitution, the whole of ſuch inciſions muſt have ſloughed off, a dreadful and an irremediable calamity! but in this healthy and vigorous young man, the parts united moſt happily.

* The part was not covered with lint or compreſſure for fear of diſordering the needles, or concealing any accidental inflammation, but to prevent any ill conſequences from the extreme hollowneſs of cheek, a nice fitted *plumper*, or compreſs of ſoft rolled lint, was introduced into the mouth, and the jaws bandaged, to prevent motion during ſleep, and he was hardly permitted to lie down in bed for fear of ſome miſchance.



№ 40



Page 42.

JAMES HALL.

Drawn by J. Bell.

Engraved by E. Mitchell.

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In operating on this tumor, I was ſurpriſed to find a very ſingular connection betwixt the veins and the central and more conſpicuous tubercles, which were indeed firm but elaſtic ſacs, of pure and coagulated blood, incloſed in very thick and ſolid walls; and, upon diſſecting the tumor after it was laid upon the table, the great tubercle being cut open, and the hard and clotted blood turned out, it was manifeſt and viſible, diſtinctly viſible, that theſe cellular cavities had communications with the greater veins.

Many diſtreſſing, and ſome fortunate caſes of this nature have been under my care; tumors of a leſs malignant nature, and eaſily extirpated, preſent themſelves daily, and excite no perturbation; but I would endeavour, by relating leſs favourable or fortunate caſes, to enure you to difficulties, and diſappointments.

" Mr. S——, a venerable old man of 60 years of age, remarkably ſtrong, active, and athletic, for his time of life, had been long ſubject to a very dangerous ſwelling of the parotid gland, which now manifeſtly declined to a ſtate of cancer. The tumor began early in life, and was extirpated twenty years ago by Mr. Dunlop, a celebrated ſurgeon in Glaſgow: but a gland in which the trunk of the carotid artery is ſo entirely imbedded, can never be entirely extirpated thence, it having grown again ſlowly. Mr. Dunlop declining himſelf to perform the operation, and yet deſirous that Mr. S—— ſhould have every poſſible chance for life, has requeſted me to receive him under my care.

" The tumor is divided in the middle by the ſcar of the former operation; along that line it is irregularly ſtraightened and bound down; it riſes on each ſide of the ſcar, in knobs or apices of a ſtony hardneſs, reddened of late on the ſurface, with a coarſe granulated and adhering ſkin. The whole ſurface of the tumor is of a duſky red, and its extent very great, for it covers all the flat part of the cheek; a flattened part riſes over the zygoma, towards the temple, to which it adheres very firmly; one glandular and almoſt ſeparate lump, lies far forwards upon the cheek, and ſeems to me a tumor of the ſocia parotidis, while the reſt is a tumor aſſuredly of the parotid itſelf. The tumor is ſo large as to be flat though bulky; the moſt ſalient point is that which lies immediately *before* the ear, the lap of which is turned back by it; another branch, I may call it, of the tumor, lies *under* the lap of the ear, and preſſes it upwards; the chief maſs of the tumor lies upon the cheek, but a very bulky part lies deeply imbedded behind the angle of the lower jaw-bone; and this general form and relation of the tumor to the adjacent parts is repreſented in the ſketch, No. 40, all except the unpropitious appearance

of it, for it was of a deep red colour, ſenſibly inflamed, the inflammation increaſing every day, with a deep and ſtunning pain, while all the baſis of the tumor was hard as ſtone.

" Nothing can be more unpropitious than the ſtate of this gland; firſt, it is a diſeaſe returning long after its growth had been interrupted by amputation: ſecondly, it is very firm, of a ſtony hardneſs, very irregular and knobby; that part which lies out upon the cheek is bound down firm, and flat, by the faſcia, or tendinous membrane that deſcends from the zygoma, and by the platyſma myoides muſcle: thirdly, it is growing ſenſibly and rapidly, and its ſurface has begun to take a deep and livid colour, while very poignant and torturing pains ſhoot through the tumor, prevent his ſleep, and diſtract him while awake. This ſchirrus has every character of approaching cancer, it is moſt likely too late to attempt the operation, yet what would not one do or ſuffer to preſerve life? The operation too is full of danger; this gland cannot be extirpated but by deep inciſions, and a very ſevere and ſlow diſſection; at the beſt, it cannot be ſeparated from the angle of the jaw, without cutting the portio dura of the auditory nerve, and paralyzing the cheek; nor without dividing the temporal, facial, and other arteries: perhaps it may not be poſſible to extirpate it totally, for fear of wounding the very trunk of the carotid artery, and that operation which is begun with the knife, it may be neceſſary to finiſh leſs perfectly with the ligature. This is the firſt time I have been obliged to think of ſuch a reſource: the latter part of the operation muſt be performed by poiſing out the gland from the deep hollow under the zygoma, and behind the angle of the jaw, and then it may be neceſſary to ſtrangle with the ligature, what aſſuredly we dare not amputate with the knife.

" I came to this decided concluſion in my own mind, that, though a caſe the moſt unpromiſing I had ever witneſſed, it was my duty, in compliance with Mr. Dunlop's and his patient's wiſhes, and with Dr. Monro's advice, to perform the operation, difficult as it ſeemed, and it was plainly ſuch as admitted of no previous plan, but required that I ſhould be guided by circumſtances, and my paſt experience, for I had often extirpated the diſeaſed parotid.

" I can hardly enter too much into the detail of ſuch an operation, ſeeing eſpecially that it had an unfavourable iſſue; I entered upon it with more than uſual compoſure, with more than I thought natural to the occaſion, but, I believe, it was the very difficulty of the caſe that reconciled me to my taſk, for I was conſcious, in ſuch difficult circumſtances, I was entitled to ſtop, that it was my duty to ſtop,

the moment I approached any dangerous point, that I was no way reſponſible for extirpating the whole tumor, nor for doing all with the knife. The peculiar complexion of the tumor, for it was now inflamed almoſt to ulceration, and accompanied with lancinating pains, was unfavourable to our hopes; its growth, after being once extirpated, confirmed the ſuſpicion of its being of a cancerous nature; and the parotid has the temporal and maxillary arteries imbedded in it, while the portio dura, or middle nerve of the face, that great nerve which runs acroſs the cheek, and goes to all the ſide of the face, paſſing through it in many branches, ſo that it abſolutely cannot be cut away from its root, which ſinks deep behind the branch of the lower jaw-bone, without cutting the carotid artery; and it cannot be torn away, the firm nerve being entwined with its ſubſtance; even the caſting a ligature about the root of the gland is accompanied with excruciating and maddening pain, the nature of which may be imagined from the agony which a tooth-ach or a rheumatic affection of the temple cauſes. The act of tying a nerve, I am conſcious, produces a kind of injury, accompanied with terrible inflammation: this injury is permanent, and the inflammation becomes habitual. It often happens, for example, that the nerves of an amputated ſtump are ſo engaged in the cicatrix, that their extremities being ſuperficial, and covered only with a delicate and thin cicatrix, the ſlighteſt accident irritates and inflames them; and I have ſeen a ſtump expoſed by this to paroxyſms of inflammation, in which the ſtump ſwelled to the ſize almoſt of the patient's body, attended with fever, and ſuch convulſive ſtartings of the ſtump as uſually occur immediately after amputation. The cutting of the portio dura, or nerve of the face, occaſions the moſt excruciating pain, as I have already explained in the caſe of Cap. G——, (vid. foot note to page 201,) and I have reaſon to believe, that the pain proceeding from the truncated extremity of this nerve being unavoidably engaged in the cicatrix after an operation ſuch as this, cauſes the return of the ſwelling, revives the diſeaſe in whatever remains of the gland, and is the cauſe of its cancerous nature.

" My inciſions were made in a tripod-like form; not ſtraight but bending, ſo as by their prolongation over the cheek, ear, and temple, to make a triangle, in direct lines with three corners, which being diſſected away, expoſed the convex part of the tumor. By giving theſe three inciſions a circular form in the center, I left the adhering part of the ſkin, attached to the moſt diſeaſed part of the gland, and this center of knobular and ſtony glandular ſubſtance, with thickened and ad-

hering ſkin, connected firmly by the ſcar of the former operation, I left untouched, and cut up three flaps of thin and ſound ſkin.

" After diſſecting back the flaps and expoſing the ſurface of the tumor, I diſſected away that part of the tumor which approached the mouth, and lay upon the maſſeter muſcle, with which it was ſo connected that I choſe to cut away large pieces of the muſcle, hardened and identified with the tumor, leaving the jaw-bone bare near its angle, rather than leave any part of the diſeaſe. Next, I turned the tumor down from the ear; but do not imagine this was accompliſhed eaſily, as in ordinary tumors bedded in looſe cellular ſubſtance; this tumor was ſo firmly embraced by the faſcia, and adhered ſo firmly to the zygoma, to the thick faſcia which deſcends from it, and to the tendinous parts of the temporal muſcle, that I was cutting through a firm, mixed, cartilaginous ſubſtance, and could not diſtinguiſh where I had got through the gland, or its adheſions, but by diſtinguiſhing that I was cutting muſcular fleſh, or encountering a naked bone. The third part of the diſſection was at once cruel and full of danger; it was the diſſecting away the tumor from the cartilaginous tube of the ear, which was yet done ſo effectually, as to detach the tumor from the whole length of that tube, down to the temporal bone: but there, a big and firm root, ſeemed ſo fixed, that I durſt go no further with the knife; I had diſſected the tumor backwards from the cheek, and upwards from behind the jaw-bone, and inſulated it up to that point where the temporal artery transfixes the gland juſt before the ear; there, it will be recollected, the great internal maxillary artery divides from the temporal arteries; I could go no further, the next ſtroke of the knife would, in ſevering the gland from its root, have cut the common root of the maxillary and temporal arteries, would, in ſhort, have truncated the carotid artery; what remained of the operation could therefore be done only by ligature.

" In this diſſection I experienced all the difficulties peculiar to a ſecond operation; for a gland which grows again after being cut, is ſo bound down to every ſubjacent part, by the ſcar of the ſkin, and by new and ſtrong adheſions, that its connections are of an unuſual and cartilaginous firmneſs: and I had, in this caſe to encounter the additional danger of a tumor far advanced in its progreſs towards the laſt ſtage of ſchirrus, and ready to degenerate into cancer; and it appears to me that that unfavourable change which is marked by ſhooting pains, conſiſts in inflammation, is accompanied with adheſions, or, to ſpeak more truly, with a

conſolidation of the diſeaſed gland, with ſurrounding bones and muſcles, juſt as the ſchirrous breaſt is united ſolidly and in ſubſtance, with the pectoral muſcles, and the ribs: in the preſent caſe, the faſcia, deſcending from the zygoma over the ſurface of the tumor, was identified with its ſubſtance, and, when cut, was like a cartilaginous ligament, hard, and thick. The diſſection of the part of the tumor which lay over the jaw, and maſſeter muſcle, was equally rude, and imperfect; for the tumor was equally identified with the ſubſtance of this muſcle, which was, in its own ſubſtance, of a griſtly hardneſs. The tumor, in ſhort, adhered to the faſcia of the temple, to the zygoma, to the maſſeter, to the jaw-bone, and to the cartilaginous tube of the ear; from all of which, it was more or leſs rudely or delicately diſſected; but with ſuch excruciating pain that Mr. S——, though a man of the moſt perfect compoſure, courage, and conſtancy, grew deadly pale, hiccuped, fainted, would have fallen from the chair, had he not been ſupported, and that ſo early in the operation, that even his neckcloth was not yet ſtained, at leaſt, not wet with blood.

"We were obliged to lay him down, to lave cold water on his face, to ſuſpend the diſſection for a whole quarter of an hour; this was in the beginning of the operation, which laſted ten minutes after it was reſumed.

"The firſt artery which ſprung was the tranſverſalis faciei, but it was too ſmall to be heeded, and it was to be cut again, wherefore I diſregarded it, and it ſhrunk: the next artery, in diſſecting the lower part of the tumor, was the labial or facial, where it turns round the angle of the jaw; in this, as in all other diſſections of the like nature, it ſtood out from its cellular ſubſtance ſo inſulated, to the extent of half an inch, that I found it eaſy, without the needle or tenaculum, to caſt a ligature round it, by laying the loop of the ligature over its mouth, and drawing it: the third artery was the great temporal artery; the manner in which it preſented was not pleaſant, for, firſt, in diſſecting downwards that part of the tumor which covered the zygoma, the artery was neceſſarily opened; but, knowing that I had not approached any dangerous point, I clapped the point of my left fore-finger on the mouth of the artery, while graſping the body of the tumor in the hand, I continued to diſſect it downwards from the temple, and to dig it away from the cartilaginous tube of the ear; then, lifting the point of my fore-finger, the mouth of the artery appeared in the very center of the tumor, throwing out its blood, and was tied. By diſſecting the gland down from the zygoma, and from behind the angle of the jaw, I had almoſt touched the point where the carotid

forks into the internal maxillary and temporal arteries; to have gone further, would have been raſh and unpardonable; the next ſtroke of the knife would have truncated the carotid artery, and left no poſſible chance of ſaving the patient, but inſtant compreſſion of the artery at that point with the thumb, and a deſperate dive with the crooked needle at that part behind the angle of the jaw, where the trunk forks into the external and internal carotid arteries.

" I wrought ſo ſucceſsfully with my fingers, as to inſulate the gland all but a trivial root; I then puſhed the flat handle of the ſcalpel round and round, ſo as to leſſen that root ſtill more: I next with the fingers alone paſſed a big and thick ligature round the root of the tumor, and tied it in a general way, and by the hold of this ligature was enabled to turn the tumor round like a button upon its ſtalk, and by compreſſing it, was enabled to feel more diſtinctly to the root of this ſlender neck. I believed, but I was miſtaken, that I could drive the eyed end of my needle through this; it was of far too firm a ſubſtance for any ſuch attempt; but reſolved any way to get at its root, I turned at laſt the point of the needle to this pedicle, ſtruck it through behind the general ligature, and having thus carried a very thick waxed ligature through the root, I cut the ligature at the eye of the needle, tied two of the ends round one ſide of the tumor, the two others round the other ſide of the tumor, then croſſing them, and bringing the reſpective ends round the oppoſite ſides of the tumor, I tied them again; and as this was the point neceſſarily including the portio dura, a great nerve of the ſide of the face, the drawing of the ligatures proved the moſt cruel part of the operation, was accompanied with an outcry of intolerable ſuffering; the cheek fell paralytic, and became inſtantly oblique, and I was impreſſed alſo with the conviction, that I had ſo pulled out the gland by the help of the general ligature from its deepeſt ſeat, betwixt the jaw and temporal bone, that I had, in tying the root of the ſchirrous gland and the portio dura, tied alſo the carotid *."

" The gland was cut off, and only a button left with thoſe ligatures about it: the whole operation was bloodleſs: at the firſt dreſſing, at the diſtance of four days, the whole ſurface was found in a ſtate of kindly ſuppuration, but the ligatures, eſpecially that which encircled the lower part of the tumor, needed to be drawn firm, which occaſioned once more excruciating pain, which continued through the whole

* The ſketches No. 40 and 41 repreſent the external appearance and ultimate diſſection of this tumor. No. 40 repreſents the tumor; No. 41 the diſſection. The button of the gland that was left, and the ligatures, and the ear, of their natural ſize.

night, during which our patient was feveriſh and reſtleſs. On the ſecond dreſſing, at the diſtance of ſeven days from the operation, I found the gland, or the remains of it, not killed by the ligature, but adhering round all its edges, to the ſurrounding parts; and eſpecially I found it adhering firmly to the flap of the ear. I diſengaged the adheſions with the probe, and examined the ligatures and found them looſe; but having fixed them with running knots at laſt dreſſing, I now finding it impoſſible to draw them tighter, took another method, viz. paſſing the ends of the upper ligature through the eye of a large crooked needle, and carrying it, eye foremoſt, round the gland, I carried the ſame ligature a ſecond time round the neck of the tumor, and tied and drew it again with conſiderable pain. The button-like head and neck were now ſo hard and brittle, that I might ſafely have ſnipped them acroſs, but I thought it beſt, ſince the ligature ſtill occaſioned pain, to leave it to kill the part completely. At a third dreſſing I found ſtill the gland not killed, but adhering to the ear, and bleeding when touched, ſo that Dr. Monro could not be perſuaded that the ligature actually ſurrounded the tumor. I drew the ligature now a fourth time with great pain; I wearied for its ſloughing, as this root of the gland ſeemed to delay the cure, which was otherwiſe far advanced; but at next dreſſing I found the tumor hard, brittle, entirely blackened, and turning in every direction upon its narrow neck, which I twiſted off with a very ſlight twitch, merely by turning it round and round. The ſurfaces ſuppurated fairly, and granulated; and the cheek healed evenly and well: but the pains never entirely ceaſed; our patient had rheumatic feelings in all that ſide of the head, always referable to the diſeaſed part: they were increaſed in moiſt weather, or when the eaſt wind blew. He retired to a delightful climate near the mouth of the Clyde, and while there the thickening of the parts daily leſſened, and I flattered myſelf he would entirely recover; but after receiving from our patient a ſucceſſion of very afflicting letters, he returned to me in the month of January, in a very calamitous ſituation, with the tumor almoſt as big as in the month of July, when the operation was performed, and having all the aſpect of a part ready to burſt out into cancer. The ſurface and the cicatrix, and all that belonged to the ſkin, ſeemed to be particularly diſeaſed, and prone to ulceration. Three points ſtood particularly prominent like knuckles, from the centre of the ſore; theſe were the three corner points of the ſkin formed by the triangular inciſion; they were of a dull red colour, extremely painful, with an indiſtinct ſenſe of fluctuation, or rather of bogieneſs, (ſoft and hard mixed,) and reſembled in ſhort the livid ſkin of a ſchirrous breaſt, when the operation having

been unſucceſsful, the part is about to burſt into open cancer. The pain which had for ſome months been moderate and tempered with intermiſſions, was now unremitting, extremely ſevere, ſhot acroſs the cheek during the day with ſtunning violence, and at night was ſo fierce and intolerable, like the burning of live-coals, that he wiſhed for ice to apply it to the ſide of his head; and even with theſe large doſes of opium which he had learned to uſe, he paſſed much of the night without cloſing his eyes. With Dr. Monro's conſent, the uſual, the hopeleſs, preſcriptions of hyoſciamus and mercury were given him, and he returned to the care of his ſurgeon at home, whoſe letters announced to us only a ſucceſſion of ſufferings daily more and more, and were terminating at laſt in a fatal cancer: he ſurvived but a few months."

You perceive how entirely it is my duty to acquaint you with all poſſible events, with the good and the ill fortune the ſurgeon has to look for. Larger tumors we often extirpate ſafely, looſer and ſmaller tumors, we find it every day our duty to cut out by way of prevention; glandular tumors, which are at once painful, and inclined to adhere to ſurrounding parts, are always to be ſuſpected; and when the character of a tumor which is to be gathered from its conſiſtence, forms, adheſions, the ſtate of its ſurface, and the degree of pain, rather than from its ſize, is ſuch as I have repreſented in this narrative, we ſhould proceed to do our duty without delay; and all the regard we owe to our own reputation is by a juſt prognoſis to warn the patient or his friends of the eventual danger of the caſe.

Thoſe more ordinary operations on tumors rolling under the ſkin, inſulated, eaſily extirpated, and which we know it to be our duty to diſſect out, as a meaſure of precaution, I need not deſcribe to you; but thoſe in which there is any thing either ſingular in the place of the tumor, or critical in the diſſection required, I hold it my duty to repreſent; and I am permitted by Mr. Dunlop, ſurgeon in Glaſgow, to explain to you ſome things very ſingular in the operation which he found it prudent to ſubmit to in his own perſon.

Mr. Dunlop, ſurgeon, after deliberate and frequent conſultation with his father, reſolved to rid himſelf of a continual anxiety in regard to a glandular ſwelling, deep ſeated, lying immediately under the lobe of the ear, and which had been increaſing, though ſlowly, for five years. No well inſtructed ſurgeon could be indifferent to the conſequences of ſuch a tumor in his own perſon. Had the gland been a mere ſcrophulous ſwelling, he might have waited the event patiently, of its ſuppurating, ſhrinking, or remaining ſtationary; but a gland, hard as a ſtone, gradually increaſing

in ſize, deep ſeated, extending its adheſions, and connecting itſelf with the carotid artery and portio dura, was not to be long diſregarded. Much as I have been in the habit of comparing external with the correſponding internal parts, and planning operations, there were many things in this diſſection altogether unexpected, and for which I was in no ſhape prepared. I felt (more than even in thoſe caſes in which I had been correct in my conjectures,) the neceſſity of thinking long before lifting the knife: I was ſenſible of ſomething very uncommon and anomalous in this tumor, for though it did not ſeem to adhere, it lay very deep, though moveable, its form could not be diſtinguiſhed, though extremely hard and globular, it ſeemed to be covered with coats of an extraordinary and unaccountable thickneſs; and, if I can pretend to remember any conjecture I made, it was a very miſtaken one, viz. that the fascia, fat, and cellular ſubſtance had thickened to a ſingular degree over it. But Mr. Dunlop, paſſionately deſirous of being rid of the tumor, required that I ſhould perform the operation without delay.

The uſual apparatus of knives and needles, a fork to transfix and hold the tumor with, tenaculæ and diſſecting forceps, together with ſponge, and a long bandage being prepared, I began my operation by an inciſion carried over the center of the tumor of three inches long, running behind the line of the jaw-bone, and parallel with it from the tip of the ear downwards; the edges of the ſkin being then drawn ſtrongly to either ſide, I proceeded to diſſect the tumor, but after I had diſſected off the faſcia, the tumor ſeemed ſtill ſoft and ſhapeleſs; nothing like a firm gland or circumſcribed tumor appeared; what preſented under my knife was flat and fleſhy, and undefined; and when this fleſhy maſs was pinched up betwixt the finger and thumb, the hard tumor was diſtinguiſhed under it: I now recollected that I was cutting directly over that part of the parotid gland which lies behind the angle of the jaw, and as inſtantly diſtinguiſhed, that the ſurface I had laid bare, was no other than the flat white granulated ſubſtance of the gland. I perceived that the tumor, the object of my operation, lay under the parotid: I firſt diſſected round this lobe of the parotid on each ſide, then turned off the lap of the parotid, or that lobe which lies behind and under the ear, and then ſaw the indurated gland lying beneath it.

This was aſſuredly a delicate piece of diſſection; for firſt the lobe of the parotid was turned back and carried behind the angle of the jaw, at that point where the diviſion of the external carotid enters into its ſubſtance. Under the gland lay the trunk of the carotid, and the ſpace was far from being free for making ſo dan-

gerous a diſſection confidently: there was no want of courage on the part of my patient, but it was ſomewhat of an obſtreperous and boiſterous kind; for having imagined the tumor a ſimple and moveable one, to be cut or dug, or torn out eaſily and quickly; he was provoked at my tedious way of diſſecting, and called for a mirror to inſpect, if not to direct my inciſions. The gland itſelf was now laid bare with its gliſtening bluiſh capſule of cellular ſubſtance, and while the lobe of the parotid was held up by my aſſiſtant, I diſſected cautiouſly and ſlowly into the angle, to ſeparate the tumor from its connections. In the accompanying ſketch, No. 42, made inſtantly after the diſſection, the ſides of the inciſion are marked (a a), the parotid gland held upwards by a hook ſtruck through the faſcia is marked (b), the tumor lurking under it, and entirely enveloped in it, (for it is flat and cuſhion like,) is marked (c). The operation laſted long, and was not a very tranquil one: but it was ſafe, and by making the inciſion merely longitudinal, without any croſs inciſion, and immediately under the whiſker, and by pinning it nicely and delicately with fine ſewing needles, and laying ſlips of court plaſter curiouſly betwixt each needle, the adheſion was accompliſhed in a few days, with only a very ſlight leaking of pure ſaliva from the wounded ſurface of the gland, which laſted but two days, and in eight days my friend was well and had returned home: it is by his expreſs permiſſion I lay this ſlight ſketch of the diſſection before you.

Slight as theſe difficulties may appear in this narrative, it is fit you be aware of them; for the young ſurgeon, in the moment of ſeeing ſomething altogether unexpected, a flat and ſhapeleſs maſs, in place of a firm circumſcribed gland, is in danger of loſing courage, and falling into confuſion. I hope I need not remind you how unpleaſant an accident it would have proved, had a young and thoughtleſs operator in theſe circumſtances proceeded raſhly, and cut acroſs the parotid, miſtaking it for the tumor, or cut at a venture, down into the angle where the Carotid and Portio Dura lie *. It is juſt ſuch a tumor as this, that by adheſion and induration

* The ſketch of this diſſection explains the difficulty and delicacy of it. The lobe of the ear is marked (*a*); it was from the hollow betwixt the ear, the angle of the jaw, and the vertebræ, that hollow where the carotid arteries lie, that the tumor was diſſected. In order to avoid deformity, I had made the inciſion longitudinal only, and not very long, no more than three inches; (b) marks the lower lobe of the parotid gland, which in its natural ſituation extends almoſt to the angle of the jaw, and which in this caſe entirely involved the ſchirrous gland; but at (b) the parotid was diſſected from the ſurface of the gland, turned upwards and held aſide by the hook, till the gland (c) was diſſected out from beneath it. The whole appearance of the parts was in this caſe like that of a diſſected hernia, the faſcia of the gland (d) re-

SKETCH N°42



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Drawn by J. Bell.

Engraved by E. Mitchell.

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affects all the surrounding parts, becomes too formidably connected to be extirpated, and at last, by causing cancer and destruction of the bones, and by its enormous size, lays the patient's head upon the pillow from which it is never to be raised again. I have once saw, just from so slight a beginning, a boy with an Osteo-sarcomatous tumor of the head, where bones, muscles, and glands, were all massed in one common tumor, big as the original head, of a weight too great for the neck to raise, and which, when it was to be moved, was moved with the help of both hands; the lad died of stupor and apoplexy, from suppuration of the brain.

It has often struck me that the things a surgeon ventures to do in the moment of operation, resemble in one respect those which a soldier does in mounting a breach: what is past looks like a dream, and upon returning to the scene, and considering the danger that is over, he shudders at his hair breadth escapes, and is conscious of having done, what he can never venture to do again. This has been especially my feeling every time that I have in turning over my case books, glanced my eye on the following case of Jane Sharp.

JANE SHARP, aged 27.

January 15th M. J. Bell.

"About 12 years ago, without any evident cause, she observed a small very painful tumor forming immediately under the right ear, which gradually increased for four years, until it had arrived at the size of a large goose's egg, rising up anterior to the ear. At this time she had it cut out; during the operation she lost a considerable quantity of blood, and suffered great pain; since which she has been unable to move the muscles of that side of the face, which is paralysed, in consequence of the division of the Portio Dura, or facial nerve. About a year after, the tumor began again to form, accompanied occasionally by lancing pains; since which time it has increased gradually. It is at present about the size of a large hen's egg, hard, unequal on its surface, quite colourless, and at times accompanied by stinging pains. It extends considerably behind the jaw, and on the anterior part of it is seen the cicatrix from the former operation."

17th.

A tolerable night's rest, no hemorrhagy, but she complains of pain in the throat and difficult deglutition.

sembled in some degree that of the herniary sac; the parotid resembled a thickened omentum, which being turned aside exposed the gland, as the laying aside of the omentum in operating for hernia shows the turn of the incarcerated intestine.

18th.

She complains to-day of difficulty of breathing, the pain of the throat continues, the bandage being ſlackened, there is immediate relief to both, ſhe ſleeps ill, opium is ſubſtituted for the draught.

19th.

The ſponges adhere firmly to the ſurface of the wound, there is little tenſion or inflammation of the parts, but ſhe ſtill complains of the pain in the throat, chiefly on deglutition.

20th.

Two of the ſponges were removed with little difficulty or pain, no hemorrhagy. The wound is filled up with lint.

22d.

All the ſponge is removed.

25th.

The diſcharge is copious.

February 4th.

The cavity fills up rapidly.

15th.

She continues to do well.

25th.

She was diſmiſſed nearly well.

Report of the Operation by Mr. Bell, January 16.

" The one half of the parotid gland, that which lies behind the angle of the jaw, had been left: the ſcar of the former operation was on the fore-part of the tumor: The tumor lay behind and under the ear, preſſing deep betwixt the maſtoid proceſs, and the riſing branch of the jaw bone. It ſeemed outwardly a ſmall tumour, but it had ſhot down very deep, adhering to the pteregoid proceſs and to the back of the pharynx. The dangers of the operation were theſe; the portia duria, the 9th pair of nerves paſſed through the tumor: immediately under it lay the trunk of the carotid. The external carotid behind the lower jaw, but chiefly the large jugular vein, was in danger, for the tumor lay ſo entirely under the maſtoid muſcle, that part of the muſcle is taken away with the gland. The gland being diſſected free in its lower part, where it lay near the carotid artery, was torn up from the roots where it adhered to the back of the fauces. The internal maxillary artery bled very profuſely; a ſmall piece of ſponge, the ſize of the thumb, and ſupported by other pieces of ſponge fill-



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SKETCHES OF THE TUMOR OF JENNY BROWN.

Drawn by J. Bell.

Engraved by E. Mitchell.

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ing up all the hollow, was preſſed upon the artery at the back of the noſtril. The ſwelling of this piece of ſponge cauſed a difficulty of deglutition, which ceaſed when the ſponge was removed. After the operation I put my finger into the hollow whence the gland was extracted, which I felt to be two inches and a half deep—at its lower angle (i. e.) behind the corner of the jaw bone the carotid lay bare, beating ſtrongly, not dilated; the upper part of the wound was deep, ſo that the finger touched the pteregoid proceſs forwards, and the apophyſis cuniformis of the occiput backwards; and when ſhe ſwallowed, the morſel, in paſſing down the pharynx, preſſed upon the point of the finger."

When it happens that a glandular ſwelling, ſmall in its firſt ſtage, and but too little formidable to excite alarm, grows in its ſecond ſtage to ſuch magnitude as plainly to require extirpation, which the ſurgeon, even after he has begun the operation, dare not complete; when the ſame unhappy perſon preſents himſelf again, claims the aſſiſtance of the ſurgeon, willingly offers to ſubject himſelf to any operation however ſevere or cruel, but is by a formal conſultation rejected and bereaved of all hope of relief, is not the doctrine explained in my preliminary obſervations, but too certainly proved? In this ſenſe I venture to call your attention in a particular manner to the caſe which I am now to relate, and to the reflections which occurred to me on this conſultation.

"Jenny Brown was a poor ſolitary thing, who worked laborioufly to maintain her aged mother, her father being ſome years dead: ſhe ſlaved at all kinds of work as an out ſervant in a farm-yard. After churning milk, being exceedingly heated, ſhe went out with her cap looſe, and jaws expoſed, and by carrying bundles of wet graſs for the cows upon her head, had a ſevere tooth-ach, for which a tooth was pulled, and ſtill continuing the ſame labour, ſhe got cold; thence aroſe a kernel-like ſwelling of a gland under the lower jaw near the gum of the corrupted tooth. Her face was ſwelled, ſo that her eyes were cloſed; the lump grew as big as a hen's egg, with ſevere pain; the ſwelling of the face ſubſided, the pain ceaſed, but the glandular tumor remained. Such are the ſlight beginning of the diſeaſe repreſented in this drawing; it is but too uſual to ſay, "there is only a ſwelled gland," to believe that its ſwelling will ſubſide ſpontaneouſly, to be careleſs though it continue to grow; but when the patient who has diſappeared for many months, returns with a ſwelling, the final event of which is no longer doubtful, the ſurgeon muſt feel very poignantly the fault he has been guilty of."

Whenever an operation is ill concerted; when the ſurgeon proceeds to extirpate a tumor with this vulgar notion in his head, "we ſhall try to take it away," he is almoſt ſure to fail: accidents, no doubt, will prevent the moſt dexterous ſurgeon from accompliſhing all his purpoſe, and a zealous man will ſometimes attempt what he dare hardly perform; but a ſurgeon really acquainted with the uncertainties and difficulties of his profeſſion will, even in the leaſt dangerous circumſtances, reflect long and much on the nature of the tumor which he is to extirpate, and the anatomy of the adjacent parts: he will try to decide whether the tumor lies without or within the faſcia of the platiſma myoides muſcle; whether it conſiſts of various ſmaller glands, or of one only; whether it has its arteries from one point or ſtem, ſo that it could be diſſected round and inſulated, this point being left to the laſt entire, or from various ſources, ſo as to make a ſlow and bloody operation neceſſary; whether theſe arteries muſt be cut near to their going off from the carotid; whether the carotid itſelf, or its immediate branches may not be entangled in the roots of the tumor. Such calculations I will venture to ſay never entered into the mind of the operator, who firſt adventured to extirpate this tumor: he entered upon it with little premeditation, and ſtopped ſhort at the firſt ſlight appearance of danger.

To extirpate any tumor ſafely, you muſt keep to its ſurface; diſſect cellular ſubſtance only; never touch, if poſſible, its ſyſtem of veſſels; if once you plunge into its center, you are inundated with blood, (unleſs it be merely a ſteatoma,) and your future diſſection is irregular and imperfect. The firſt ſketch, No. 43, ſhows the ſize and form of the tumor, at the time the ill adviſed operation I ſpeak of was attempted; a very long inciſion being made, the operator ſeemed to me to plunge into the very heart of the tumor, ſeveral arteries (not it is manifeſt of very dangerous ſize, for he had never even approached the roots of the tumor,) threw out blood, all the aſſiſtants thruſt in their fingers to ſtem the blood, and the operator taking advantage of this conſternation, little confident in himſelf, and having calculated no circumſtance before hand, obtained an eaſy and unanimous vote, that the inciſion ſhould be ſewed up. This was to me manifeſtly the reſult of an imperfect knowledge of the rout and ſize of the ſeveral arteries, of the error of cutting towards the center of a tumor, and of the worſt of all faults and weakneſſes, that of turning round with fear and trepidation, in the midſt of occaſional difficulties, to conſult thoſe, who from the moment an operation is begun, ſhould be no more than ſpectators. It proceeds from a paltry deſire, to make the attendant ſurgeons parties, not to the general operation, for which they have given their voice, but to

each ſtep of it. Let the ſurgeon act from himſelf according to the beſt of his judgment, cut ſlowly when he is conſcious of approaching too near the great veſſels, and ſtop when alarmed by that immediate ſenſe of danger, of which he muſt be the ſole judge, or at leaſt the moſt competent.

One advantage this poor creature derived from this unſucceſsful operation, viz. the relief from pain, for ſhe was relieved by the loſs of blood, in ſo much that ſhe recovered her health, and, in ſome degree, her ſtrength, and returned to work, for the ſupport of her old mother; at leaſt ſhe could ſpin. For a long while ſhe has been unequal even to this; ſhe has lingered and waſted in a very helpleſs condition, and is now in a ſtate of extreme weakneſs for want of food: ſhe walks but a few paces without ſtopping for want of breath; her ſwallowing is difficult; ſhe has great pain night and day from the mere diſtenſion and ſize (I am perſuaded,) of the tumor, which is not reddened in the very ſlighteſt degree: the weight of the tumor is intolerable, and it appears to me that, in not many weeks, at the utmoſt in a few months, ſhe muſt be releaſed from her ſufferings. She has ſaved one ſhilling to enable her to travel to town, from the village ſhe lives in, (Falkirk,) which is about 20 miles diſtant; and now, from the firſt and unſucceſsful operation, ſhe preſents herſelf, after no great lapſe of time, with a tumor ſo enormous, as to make the queſtion of operation difficult to reſolve, but in a condition which admits no delay, ſhe is ſure to die, and willing to ſuffer any thing which may tend to ſave her life: there is one inducement to comply with her requeſt, viz. that ſhe muſt ſurely die, though from no other cauſe than the bulk of the tumor: the tumor not being cancerous, leaves us nothing to dread after operation.

A conſultation has decided that no operation can be performed. I imagine there are very many ſafe and eaſy ways by which this tumor, great as it is, may be extirpated, or deſtroyed: perhaps there are few parts of the body in which the courſe of the arteries, and the connections of a tumor, can be ſo certainly calculated; ſurely there is none where this might be done ſo accurately as at the angle of the jaw; and, reflecting upon the poſſible ſucceſs of ſuch an attempt, I think I have eſtimated the dangers fairly, and as impartial as if the operation were my own appointed taſk.

This poor creature's difficulty of breathing ſeems to me to proceed as much from the weight of the tumor, as from the hold it has upon the parts; from the immenſe maſs reſting upon the trachea and oppreſſing even the breaſt. The ſecond drawing repreſents that conſtricted ſtate of the features, produced not by the agony of an

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aſthma, but the oppreſſion of unceaſing difficulty of breathing. The tumor has every character of what is uſually called a wen; the whole maſs incredibly hardy in proportion to its bulk, ſo that ſhe ſupports it continually with a ſling round the head and neck: it is extremely firm, not very vaſcular throughout its ſubſtance, but receiving its arteries at particular points; it has no great veins running over its ſurface, whence it may be preſumed that it has no very irritated circulation, nor any thing of a cancerous nature. The whole ſurface of the ſkin is healthy and free from redneſs or any blemiſh, except where the ſcar of the former operation paſſes obliquely over it: it is plainly glandular, the moſt prominent parts indeed conſiſting of individual glands: two large diſtinct prominences lying one before and another behind the ear, form the chief bulk of the tumor at that part, and are plainly ſeparate glands, moveable both in relation to each other and to the main tumor. The extirpation of that part which lies under the chin could give us no concern; there we could cut no arteries but the faſcial, which would be divided in ſeparating the tumor from the line of the lower jaw: its own weight ſeems to have lengthened its root, and drawn it down from under the ear, and from the angle of the jaw: it hangs ſo that I can puſh the points of my fingers deep behind it, without feeling any ſtrong adheſion, and, I am confident, it has no dangerous connection with the carotid at that critical point, where it forks behind the jaw-bone into the external and internal carotids. I am confident that the aorta and great jugular vein lie together ſafe in their ſheath, while the tumor lying external to the ſheath, might be diſſected away from it, from the maſtoid muſcle, and from the veſſels beneath quite ſafely, as we often find immenſe tumors of the thigh (equal almoſt in ſize to the patient's body,) are diſſected from under the Sartorius muſcle, without harming the femoral artery. The worſt effect of the tumor, and the moſt dangerous adheſions of it are to the ſide of the throat, to the os hyoides and its muſcles; there, by pulling down the os hyoides, it makes the ſwallowing difficult, and oppreſſes the breathing by its weight; and at that point there might be infinite trouble from arteries proceeding into the body of the tumor from thoſe of the thyroid gland. But the tumor is, by its weight, dragged ſo away from the jaw, and admits the points of all the fingers ranged in a line, ſo deep on all ſides, that, though I foreſee much difficulty, I find no abſolute danger in the attempt. Yet it muſt be done by one who goes not to work with the general and confuſed notion, of extirpating the tumor "as circumſtances will admit," and, proceeding according to the beſt of his judgment. His judgment muſt be decided and deſigns matured before he

begin; he muſt calculate at what points the arteries enter; what the probable ſize of thoſe that come from under the chin, from the lingual arteries; what the ſize of theſe derived to it from the facial, where it croſſes the angle of the jaw; what the ſize and probable direction of thoſe coming to it from the occipital, or temporal branches of the carotid; or thoſe deep ones coming from the thyroid arteries; he muſt reſolve in what ſucceſſion to cut them, and, with what precautions. The ſurgeon, who ſees an artery throw out blood furiouſly, and in the neck too, not knowing from what root it comes, muſt inſtantly fall into great confuſion: but if he has calculated every *probable* danger, he is prepared, and his patient comparatively ſafe. In the preſent caſe, the inciſion ſhould be made, not over the center of the tumor; the purpoſe of ſaving all the ſkin which inveſts it is abſurd, and the conception of diſſecting into its ſubſtance extremely ignorant. The oval inciſions ſhould be made to encircle its upper and lower parts; there are points in which it ſhould be opened freely,—as there the chief diſſections are to be performed. The great and dangerous diſſection would be in the line of the lower jaw, about three inches from it, and extending from behind the ear to the throat: the ſkin being laid back, this diſſection would follow the convex of the tumor; the tumor falling by its weight would widen the inciſion and expoſe the parts, the left hand laid upon it would preſs it down, while the aſſiſtant retracted the ſkin; the fore-finger of the left hand would guide the diſſection; the point of it, fixed upon each leſſer artery ſucceſſively as it bled, would ſtop it till it ſhrunk: the form of the tumor, the line of inciſion, and the direction of the jaw-bone would keep the relation of parts diſtinct; the operator would certainly know when he approached any dangerous point; in drawing down the tumor, and diſſecting it from under the chin, he would cut branches of the lingual arteries; preſſing the tumor next down from the angle of the jaw, he would cut the facial artery; and would go no further in that direction; having tied the facial artery, he would next, in tearing away the tumor from under the ear, divide branches of the occipital and temporal arteries: it is the ſeeing thoſe arteries bleed furiouſly in ſucceſſion, without foreſight, without knowing from what trunks, in what directions they come, or knowing what may next happen, that makes an operation ſeem bloody and dangerous.

In next diſſecting deep into the angle or cavity below the jaw, there muſt be danger; every inciſion muſt be made with caution, the point of the fore finger muſt go before to feel for the beating of the carotid artery; and much ſhould be done now by laceration, the tumor being inclined firſt from the chin backwards,

then from the occiput forwards, and pulled ſo as to give a diſtinct feeling of the parts with which it is connected, whether, for example, pulling upon the tumor moves the os hyoides fairly along with it, whether the tumor ſends down roots, involving the carotid and internal jugular vein: this deliberate and daring proceeding would, I doubt not, enable the ſurgeon to approach by diſſection, or laceration, quite cloſe to the only dangerous point, viz. that where the carotid lies under the angle of the jaw: if, having reached that point, he found a clear and diſtinct cellular ſubſtance to lead him in his diſſection, he would, preſſing aſide the dangerous parts with his finger, continue it with equal deliberation through its next ſtage; if he found inextricable adheſion, and increaſing hemorrhagy, he would ſtop; but, having ſo far inſulated the tumor, he could, if forced to ſtop, tie its root, even though ſeveral inches thick, and ſtrangle it, if not with a ſurgical ligature, at leaſt with a garter or coarſer ſtring.

I ſhould not, in the ſlighteſt degree, ſhrink from ſuch an operation, and would diſſect ſo very large a tumor with leſs reluctance, than many a ſmaller one I have dealt with. I have even a perſuaſion, that this ſecond ſtage of growth may be accompanied with circumſtances favourable to the operation, the weight of the tumor elongating its roots, weakening its adheſions, and concentrating its arteries. I beg leave to remind you of another circumſtance in ſuch an operation, which you will do well to attend to. Do not diſſect in haſte and flurry, for by time and circumſpection, you can accompliſh things which ſeem impoſſible, and I would explain my opinion and my practice more fully thus: "Would there be much danger had you to deal at once with one only of all the arteries which are cut in a tumor?" None aſſuredly.—"Would there be much additional danger were the pain of this diſſection extended from a quarter of an hour to an hour?" None.—"Have you not ſeen a preſumptuous ignorant creature, after ill-directed and inſufficient inciſions for lithotomy, grope in a patient's bladder for a ſtone, which, perhaps, did not exiſt? or, among the viſcera, where it could not be found, for a full hour by the watch, without the patient's dying?" This I have ſeen very often, and can tell where at this moment, from month to month, ſuch ſcenes are exhibited for the inſtruction of pupils in ſurgery. Let us apply this reaſoning to the caſe before us: I have uniformly found, that permitting the blood to ſtop entirely, and the inciſions to become dry before binding up a wound contributes to its ſpeedy adheſion; in all operations I wait long: this is with me one univerſal rule in operating. I have as uniformly found, that, when a diſſection became perplexed and confuſed,

the taking up of the larger veſſels, and allowing the bleeding from leſſer ones to ceaſe, and waiting till the ſurfaces get that raw look, which betokens the drying up of the blood, explains every thing, and reſtores that clear conception which I had at firſt of the relation of parts, of the arteries I have actually cut and tied, and of thoſe which are ſtill endangered: and this I regard as a rule in all difficult operations. In diſſecting this tumor, or ſuch a one, I am convinced that the danger might be brought within very narrow limits, and am confident that, in the preſent inſtance, even the lower lobe of the parotid gland, as well as the ſheath, containing the carotid artery and internal jugular vein, lie under and behind the tumor; in ſhort, that the gland lies betwixt the tumor and the artery, and defends it.

But are there not various ways, independent of direct inciſion, for working out or weakening the roots and adheſion of this, or even of a more formidable tumor? May not a greater enterpriſe than this be achieved by partial inciſions, by ligatures, or by both combined? The two great globular knots which form the upper part of the tumor, and project before and behind the ear are, I am perſuaded, ſo inſulated, that they might be diſſected away by one operation, reſerving the great maſs of the tumor for a ſecond: or the operator might go as far as he ſafely could by direct inciſion, and then ſtriking a long needle, like thoſe with which I have been accuſtomed to transfix large ſtrumous ſacs, paſs a ligature through the tumor to be tied on either ſide of it; or the tumor, I am perſuaded, might be ſo pulled away from the throat, and the long and crooked needle I ſpeak of paſſed ſo cunningly round and under the tumour, as to paſs the ligature round it without any preparatory inciſion. It is poſſible to penetrate ſo into the body of the tumor with cauſtic, as to paſs a ligature through its center, and after extirpating the chief maſs by ſtricture, to deſtroy the roots by a continued uſe of the cauſtic.—It is poſſible, without penetrating into its center, to diſſect up one ſide, or to paſs the long needle obliquely through one ſide, ſo as to give a hold to the ligature, make it embrace the neck of the tumor, and by twiſting it with a tourniquet (made by twiſting a ſtitch in the ligature and ſlipping a piece of paſteboard under the knot) from day to day, mortify and extirpate the whole maſs*.

* My reader, unleſs he be a practical ſurgeon, will not readily feel the reaſon of my enumerating thus the many reſources which will preſent themſelves, nor the ſad neceſſity of having recourſe to ſo many means. What dangers in the way of operation, what continued tortures by any ſlower and leſs dangerous method will not a man undergo to ſave life? This poor creature probably died, as thouſands have died,

But there is no need for ſubterfuges in a plain and ſimple piece of diſſection, which though not without danger, is vindicated by the ſuffocating condition of the patient, in a ſtate of protracted ſuffering; and the ſurgeon who has witneſſed ſuch a ſcene, who has felt compunction at having lightly diſmiſſed a patient in the early ſtage of a tumor, which has afterwards proved fatal, or who has felt the difficulty of deciding when a tumor was plainly to prove fatal, but yet too deeply connected to allow of extirpation, will think over all the poſſible reſources with ſincere intereſt. That thoſe of my readers who have not in practice had opportunities of witneſſing the laſt ſcene of this tragedy, may know what ſuch a tumor, a mere fatty or glandular tumor will come to, I tranſcribe the following caſe:

Mr. Samuel Lockhart committed to writing the following caſe of John Anderſon, a diſbanded ſoldier, in the ſixtieth year of his age.

"About thirty years ago, there appeared on the right ſide of the neck a tumor about the ſize of a walnut, after receiving a kick from a horſe when in the army. For the following ten years after the accident, its increaſe was very imperceptible, and he found very little inconvenience from it; but after this it began to grow larger, ſo that, at the end of the next ten years, it had got to the ſize of the fiſt. It now became very inconvenient to him from its ſize; for he never had any very acute pain in it. Being viſibly increaſing, he became very anxious to have it removed; he therefore applied for a conſultation of the medical gentlemen, firſt at London, then in Ireland, and laſt of all at Edinburgh; but in all of theſe places, he was told it would be a very dangerous operation, on account of its ſituation with reſpect to the large veſſels and nerves of the neck.

"He was now, from the ſize of the tumor, forced to quit the ſervice. Ever ſince it has been very ſenſibly increaſing, though ſlowly; but, within theſe laſt ſix years of his life, it has grown more rapidly, and, at preſent, is of a moſt enormous ſize; extending from the clavicle up to his ear, and ſtretching a conſiderable way over to the left ſide of the neck, both before and behind. At firſt, the ſkin was ſtretched equally and ſmoothly throughout the tumor; but, within the laſt-mentioned period, it has become very irregular, and there are ſeveral very large riſings and depreſſions on its ſurface. It has now become ſo inconvenient and troubleſome to him, as to render reſpiration and deglutition difficult; and the motion of his under jaw is very obſcure. He cannot articulate plainly: he was naturally a thin man, but very active, and enjoyed a very good ſtate of health previous to the accident; but, ſince which, he has been a good deal troubled with dyſpeptic complaints. His ſleep has, ſome time paſt, been a good deal impaired. He is much emaciated, and his voice is very feeble. Said, he rather heard with difficulty in the right ear.—Within theſe eight days, the tumor has ulcerated on the back part, the edges of which appear gangrenous; and there are ſeveral black ſpots on that ſide of the tumor. The diſcharge from the ulcer is very fœtid, copious, and of a dark colour.

"On the 6th of April, a violent hemorrhagy broke out from the ulcer, to the amount of a pound or two, but was ſtopped by the application of cloths dipped in cold water and vinegar. The hemorrhagy recurred again on the 7th, to a ſtill greater quantity; and was ſtopped, as in the former. No more hemorrhagy occurred until early in the morning of the 10th, when every thing was tried in vain to ſtop it; and he died about ſeven o'clock the ſame morning. He had another tumor, of the ſize of an egg, ſtretched over the coronal ſuture of the atheromatous kind. He had uſed a variety of remedies without benefit, the compoſition of which he did not know.

and by the inevitable nature of that death which awaits him, an operation which though not abſolutely ſafe, is ſo, in the hands of a dextrous ſurgeon, witneſs the following moſt intereſting caſe.—The moſt conſiderable tumor ſeated in ſo dangerous a part as the neck, which I have ever in my life extirpated, (says M. Petit,) occupied all the ſide of the face, neck, and jaws; it was almoſt entirely circular, extended from around the ear, both before and behind, upwards to the angle of the eye, forwards to the corner of the mouth, and downwards over the jaw, along the neck, to the articulation of the clavicle with the acromion proceſs.—It was ſeemingly eight inches in diameter, and the patient, about 50 years of age, had carried it twenty years; for it was of ſlow growth, its firſt beginning being a glandular induration, ſeated about two inches under the ear, and lying on the maſtoid muſcle.

When this tumor was no bigger than the fiſt, I adviſed him, and often repeated the advice, that he ſhould have it extirpated.—When he refuſed, I preſcribed ſuch diſcutient remedies, as I imagined might have ſome effect; and every time I repeated my advice, he rejected it entirely, becauſe he could ſtill conceal the tumor under a voluminous peruke, ſuch as was then in faſhion: but the tumor increaſing in bulk, ſo as no longer to be concealed, and growing ſo painful as to excite alarm, he convoked a number of ſurgeons to have their advice. I alone of all the gentlemen conſulted adviſed the extirpation of this tumor; each of us, as the conſultation was not held in the preſence of the patient, ſpoke his mind freely; and when it came to my turn, I explained myſelf thus. "Of all the reaſons, gentlemen, which you have advanced againſt the operation, one only affects me, and that is the fear of hemorrhagy from the numerous arteries of this tumor, which not having one root or pedicle,

"Dissection. On cutting the teguments over the tumor, they were found preternaturally thickened in ſeveral places; and immediately beneath, we found the platyſma myoides in the ſame ſtate. On laying open the tumor, we found it principally compoſed of fat; which, in ſeveral places, was hardened. And, diſperſed amongſt the fat, we found ſeveral pretty large cyſts, containing a very fœtid matter, of the conſiſtence and colour of linſeed oil. On examining the root of the tumor, we found it adhering by a cellular ſubſtance to the trunk of the carotid artery, the whole way; the muſcles ſo preſſed away, as to turn the face towards the left ſhoulder. The trachea was puſhed over to the left ſide.—The right ſide of the under jaw was ſo twiſted, that the flat ſide of it turned towards the tumor; and the teeth lay horizontally in the mouth. Both ſalivary and lymphatic glands were found perfectly ſound. Nothing elſe occurred on diſſection. We obſerved, on the ſurface of the tumor, ſome very beautiful ramifications of veins, in a varicoſe ſtate.

"The tumor weighed thirty pounds."

would bleed at once from all points, and from the number of its arteries, ſome moſt likely of conſiderable ſize, the patient might loſe much blood, perhaps his life. Theſe ſaid I, are the dangers, but have I not ſkilful aſſiſtants willing to ſtand by me? What then ſhould I fear! I ſhall cut away the ſkin along with the tumor which it covers becauſe they adhere, I ſhall firſt diſſect away the part that lies over the cheek, and ſome one of you appointed for that duty, ſhall be ready to clap a finger on the firſt artery I cut; and as I proceed in my diſſection, he will have a finger ready for each artery that ſprings.—Thus ſhall I purſue my operation, and whatever number of arteries are cut, ſo many fingers will there be ready to compreſs them; and the whole being accompliſhed, finger after finger being raiſed, firſt from the greater arteries, and next from the ſmaller, each in ſucceſſion will be ſecured with the needle and ligature.—The ſcheme was acceptable to all of them.—It was deferred only till the following day, and never was project better fulfilled, for never perhaps had a young ſurgeon ſo many of his maſters in ſurgery to ſupport him. Arnould, Tribauld, and the elder Le Dran, held their fingers on the arteries.—The ſmaller ones of the eye-lids, lips, &c. were conſiderably dilated, but theſe which occaſioned the moſt trouble were the anterior and poſterior branches of the temporal artery, and the facial where it turns round the lower jaw.—Each ligature held its place; at the firſt dreſſing not a drop of blood flowed; in two months or little more the wound was cicatrized *.

You will obſerve that M. Petit's confidence in undertaking an operation ſo formidable aroſe from a conviction of the tumor being ſuperficial; not under the maſtoid muſcle, but above it; not connected with the carotid artery, but endangering only the temporal, and facial branches. But the queſtion is a very awful and ſerious one, when the tumor is ſeated beneath the maſtoid muſcle, projecting from under it in conſequence of its great ſize, and probably connected at its root with the ſheath which includes the carotid artery and great jugular vein:—ſuch a tumor, if firm, glandular, growing rapidly, and preſſed inwards by the perpetual bracing of the maſtoid muſcle, will connect itſelf ſo with the parts beneath by adheſion as to make its extirpation dangerous in the laſt degree, and it will at the ſame time preſs ſo upon the throat as to make the attempt an act of neceſſity and duty. Often I have had occaſion to conſider the anatomy of this part of the neck, and eſpecially of the veſſels and nerves lying in the angle under the jaw bone, but never more anxiouſly, than when preparing for the following operation.—The ſubject of it was a gentle-

* Ouvrage Poſthume de J. L. Petit.

man about 35 years years of age, of the beſt, and moſt grateful diſpoſitions, and the ſtouteſt heart. He confidently required me, on my allegiance and duty, to perform the operation if I found it at all conſiſtent with ſafety, although it had been forbidden in many former conſultations with other ſurgeons—his courage was not in words only. While I performed a very painful and ſlow diſſection, he ſat like a monument. The tumor projected from under the ear, of a ſtony hardneſs, and of ſuch a bulk as to fill up all the angle betwixt the ear, jaw bone and neck: it extended backwards behind the ear three inches, forwards to the chin, and downwards along half the neck; it already diſplaced the larynx and throat, preſſing them over towards the left ſide; and made the ſwallowing difficult, and the breathing ſo laborious, that he could no longer ſleep at night, but ſtarted out of bed, partly from ſuffocation, partly from fear; it increaſed withal very rapidly in ſize. The ſum of the opinion which I delivered to him in writing was this: "that a tumour ſo ſituated could not ceaſe to grow, and could not fail to produce, at no very diſtant period, the moſt diſtreſſing conſequences: that upon comparing the tumor with the great veſſels and nerves of the neck, it was my perſuaſion, that though it lay upon the great carotid artery and jugular vein, it had no eſſential connection with them, and that the only arteries which would be unavoidably cut were the temporal, occipital, and facial arteries: that the carotid with its accompanying vein and nerve, were involved in their own peculiar ſheath; that the angle where the great carotid branches into the thyroid, facial, occipital, and temporal branches, was protected by the maſtoid muſcle, and by their ſheaths of cellular ſubſtance: that I thence inferred, that, though no ſuch operation can be void of danger, there was in the preſent caſe, nothing to deter the ſurgeon from attempting ſo needful a duty: that I ſhould with pleaſure aſſiſt at this operation, or with equal alacrity perform it; but, that I conceived it a neceſſary privilege that the ſurgeon, who made himſelf reſponſible for the life of a patient, ſhould be intitled in all irregular operations, eſpecially in one ſo full of danger as this, to ſtop at the firſt apprehenſion of danger."

The hiſtory of every tumor muſt be alike: and I found in the hiſtory of this particular tumor, nothing intereſting. Were I inclined to draw any inference, from what my patient told me of the origin and growth of this tumor, or from the ſevere and dangerous operation he was forced to ſubmit to, it would be that ſo ſtrongly inforced in my Preliminary Diſcourſe: viz. That no tumor, when it paſſes the uſual limits of a ſwelled gland, and begins to adhere to the ſurrounding parts, ſhould be permitted to grow; for this too, like that of Jenny Brown, was but a

ſwelled gland. The deſcription of every dangerous tumor is delivered by the patient in the ſame phraſe, "It began like a little knot or kernel, and grew ſlowly:" it will, I am perſuaded, be infinitely more acceptable to you, if, in place of the inſipid and trivial details of the beginning and ſlow growth of this tumor, I lay before you thoſe plans of the arteries and veins, which I ſchemed for my own uſe, before entering upon the operation; they will give you at once the correcteſt notions of the external form and ſize, as well as of the internal relations of this tumor.

My firſt deſire on all occaſions of danger, is to make juſt conjectures in regard to the internal relations, and probable adheſions of the tumor; and on theſe to found a true prognoſis, to be delivered to the patient, or his friends, and a rational ſcheme of the ſeveral parts and ſteps of my intended operation. Firſt, as is repreſented in the plan, No. 45, I found the tumor of very formidable dimenſions, projecting to the perpendicular height of four inches, and terminating in an apex which ſtood as prominent from under the ear, as the chin from the face and throat; and this pointed apex was the ſmalleſt part of the tumor, which increaſed in bigneſs towards its baſe, and there, eſpecially in the part lying under the maſtoid muſcle, though it was moveable, becauſe the muſcular parts of the neck are moveable, it ſeemed ſolidly connected with the parts beneath it. Secondly, though that never could be regarded as a ſuperficial tumor, which lay, in its biggeſt part, under the belly of the maſtoid muſcle; yet I found no motive for deſpair, for I was, by every calculation, perſuaded it had no very intimate relation to the more important veſſels, but ſtood thus connected: it lay ſo cloſe upon the carotid artery, where it is repreſented by the the dotted line (a), that it entirely covered that very dangerous point (b) behind the angle of the jaw, where the carotid forks into the great branches deſtined to the thyroid gland, tongue, face, and temple: that it lay cloſer ſtill upon the root of the occipital artery (c), and covered the whole length of the facial artery (d), but, though deep in reſpect of the maſtoid muſcle, and firmly compreſſed by it, it was ſuperficial in reſpect of the carotid artery, for the angle where it forks into its great branches is covered as is repreſented in No. 46, by the ſtyloid proceſs, and the muſcles ariſing from it; and is even bound down and protected by them, the artery being marked (a), and ſtylohyoideus, and ſtylogloſſus muſcles being marked (b c): the great carotid, the jugular vein, and the eighth pair were not only thus protected by the ſtyloid proceſs, and muſcles, but are farther involved in their peculiar ſheath of faſcia. It thus ſeemed to me leſs dangerous to extirpate even this great tumor, than the ſmaller one of Jean Sharp, ſeated as it was deep behind the ear,



N°45



N°46



N°48



N°49



N°47

Drawn by J. Bell.

where the carotid artery lies; but yet the degree of ſecurity, ariſing from this interpoſition of the ſtyloid proceſs, betwixt the angle of the carotid, and the body of the tumor, only rendered the operation poſſible, not ſafe: there were other manifeſt dangers to be encountered, the tumor paſſed under the maſtoid muſcle, and was ſo connected with its inner ſurface as to require that muſcle to be turned entirely backwards in diſſecting the tumor from beneath it; the tumor could not, without a degree of danger, be detached from the ſide of the throat, where, as it ſeemed to me, the carotid, the temporal, and occipital arteries, could hardly eſcape, and where the inoſculations of the external jugular vein (a), No. 47, with the great internal jugular (b) would not fail to be cut acroſs ſo as to cauſe, if not a dangerous, at leaſt, a very perplexing hemorrhagy.

With theſe conceptions I formed that plan for the operation which ſucceeded ſo far, as to carry me to the very roots of the tumor, and ſave my patient from very imminent danger. Firſt, I reſolved to have full room for ſuch a diſſection, and to carry the external inciſion obliquely acroſs the neck, in the direction of its natural wrinkle, following, in ſome degree, the edge of the maſtoid muſcle, beginning the inciſion on the occiput three inches above and behind the ear, and ending four inches below the chin: Secondly, to diſſect up the ſkin largely and widely, and, turning it back, proceed to diſſect up the maſtoid muſcle from the tumor: Thirdly, to diſſect away the tumor from the lower and leſſer point (e), No. 45, where it projected from under the maſtoid muſcle backwards, but not far; and to diſſect it next down from the ear and from the chin, towards the place of the carotid artery: Fourthly, the tumor and the maſtoid muſcle being moveable in reſpect of each other, in place of merely raiſing up the tumor gently from under the maſtoid with the deſign of diſſecting, reſolved to poiſe it up ſtrongly, in the intention of tearing it away from its adheſion, and gouging it out with my fingers. I perceived that uſing my knife here, though it might not much endanger the carotid, would wound its branches cloſe to the trunk. I conſidered laceration as the true principle of our proceeding in all ſuch dangerous points, and the thruſting in a piece of ſponge, as the beſt means of ſuppreſſing any occaſional hemorrhagy. I have gouged out tumors with the fingers "more laniario," which I ſhould never have dared to attempt with the knife.

From this plan of operation I confidently expected that there would be no other hemorrhagy, than from the general wound, viz. blood oozing out ſlowly, from the cut ſurfaces, as menſtruation does from the ſurface of the womb; unleſs it were

that ſudden guſh of blood which flows from the jugular veins when cut acroſs, but which will ceaſe inſtantly, and will be diſtinguiſhed by its black colour and by the want of pulſation, ſo as not to create even a momentary alarm.

This plan I put in execution with great ſucceſs, and it reſts upon my own mind as a conſpicuous inſtance of an operation performed in very inauſpicious circumſtances, without ſpilling, I may ſay, one drop of blood, where it ſeemed difficult to eſcape wounding even the greateſt arteries; his ſhirt was hardly moiſtened, and I had no other cauſe of alarm, than feeling with the point of my finger, the great arteries beating. Firſt, the outward inciſion of fully eight inches long, being carried round the neck, and over the apex of the tumor, the maſtoid muſcle was diſſected away from the body of it, and ſo entirely inſulated, that my aſſiſtant taking it on his fingers, turned it before or behind the tumor, according to the part that I meant to diſſect; and thus I diſſected ſometimes before, and ſometimes behind the maſtoid muſcle. In this diſſection the platyſma myoides muſcle and ſtrong faſcia of the neck were diſſected back along with the ſkin. Secondly, in diſſecting down the tumor from the occiput, and from the chin, no conſpicuous artery bled, and my aſſiſtant, while I diſſected along the line of the jaw, followed my knife with his finger-points of both hands, ſo arranged in a line, and following the inciſions in its whole length ſo correctly, that, by holding down the ſurface from which I was diſſecting away the tumor, he ſaved the arteries which might otherwiſe have been cut, and was ready, had an artery bled, to cover it inſtantly, and mark its place by clapping the point of a finger upon it; and thus he followed the diſſection over the angle, and along the whole length of the jawbone, repreſſed the throat where the lingual arteries and nerves run along, and, by preſſing down the carotid artery and its ſheath, enabled me to carry my diſſection down very low, I diſſecting and pulling the tumor away from the jaws, while he repreſſed the parts, at one time with the line of his fingers, at another period of the diſſection with a long flat piece of ſponge, cut for the purpoſe. Thirdly, turning the maſtoid muſcle now off from the tumor, I began to tear upwards and diſſect the lower part, that which projected, according to the natural relation of the parts, from under the maſtoid muſcle at its back part: and here, for the firſt time, I found reaſon to heſitate; for this part of the tumor was connected actually with the ſpine, it ſeemed to ſhoot down ſtrong thick roots, or fangs, betwixt the tranſverſe proceſſes; the external branches of the nerves which proceed from betwixt the cervical vertebræ, I had no ſcruple nor fear of dividing acroſs, but I was

come now almoſt to the flat fence of the vertebræ. I was going deep behind the pharynx and the ſheath of the carotid, and was ſenſible that the dividing the phrenic nerve, (for the principal part you recollect of the third cervical nerve is deſtined for the diaphragm), would probably prove fatal. The harm I might do was terrible, the good problematical; very little of the tumor remained, it was ſuch as even my aſſiſtant could hardly perceive, much leſs a ſpectator, but I found myſelf not intitled to venture farther, I therefore cut theſe roots acroſs, and, having thus delivered the patient from this tumor, I felt the great chaſm left by it. Now, Gentlemen, I am explaining theſe matters for your inſtruction, and the good of humanity, and with thoughts far above any politic regard for my own reputation, ſuch as might tempt me to conceal or palliate any fact: the little portion that was left of this tumor I could hardly feel: I had no miſgiving in my own mind beyond that vague, indefinable anxiety, which an upright man ſhould feel after an operation, however promiſing, and which I have never failed to ſuffer from, even where moſt ſucceſsful, for I am ever apt to imagine, that I might have performed the operation better, and this was all I felt at the time, it was only by future conſequences that I was ſtruck with regret for not venturing a little deeper *. The chaſm left by the extirpation of the tumor I next examined; the diſſected maſtoid muſcle lay looſe and flapping, and we turned it occaſionally over, from one ſide to the other, to look for bleeding veſſels, but there were none, there was nothing but the very ſlighteſt general oozing, the ſurfaces were dreſſed with lint, with a very gentle compreſſion: the wound ſuppurated favourably, and healed within the month: but the tumor has grown again to a great ſize. Such are the difficult and diſtracting circumſtances to which thoſe are reduced who, from their own timid diſpoſitions, or the ignorance of their medical friends, have allowed an indurated gland to grow and faſten itſelf by adheſions, to the ſurrounding parts, and to puſh its roots deep into the neck, or axilla.

* The tumor, in little more than a year, began to grow again; and is now, at the diſtance of two years, as large as at the time of the operation.

DISCOURSE VII.

OF SALIVARY TUMORS.

BUT it is not the diſcuſſing of intereſting doubts, and queſtions of life and death, nor the performing operations within the extreme limits of poſſible ſucceſs or poſſible ſafety, that conſtitutes the chief occupation of one engaged in practice. The more homely talent of diſtinguiſhing the various aſpects and characters of tumors, and treating them judiciouſly, is far more deſirable to acquire; and, indeed, there is a very perplexing variety of tumors within the mouth, and round the jaws, which one learns to diſtinguiſh, only by referring their various aſpects to correſponding peculiarities in the ſtructure of the parts. The tumors which I have juſt deſcribed are of a very malignant character, and, I confeſs I know not whether to refer them to the ſalivary or the lymphatic glands, to the latter rather, I believe. This, for example, of Mr. M——, though it looks like a tumor of the ſub-maxillary, I know to be a tumor of the lymphatic glands: had it been a tumor of the ſub-maxillary gland, which holds imbedded, I may ſay, in its ſubſtance, the facial artery, it could not have been extirpated without dividing that artery: the ſub-maxillary gland is divided into two maſſes, and the trunk of this artery is received into the receſs or cleft; the artery ſeems to twiſt round the gland, and I have, both in extirpating the ſub-maxillary gland, and in aſſiſting at ſuch operations, recognized it by this mark.

The following caſe, if not full of intereſting particulars, is, at leaſt, accompanied with uſeful rules; and I tranſcribe it from my caſe-book, with thoſe reflections which aroſe in my mind, when forming my opinion and preparing for the operation, as I have ever done with a ſcrupulous and conſcientious deſire, to foreſee every eventual danger, and recollect every circumſtance anatomical or pathological, which might contribute to my patient's good: the reflections, you will perceive bear a mutual relation to the inſtruction of my pupils, and my own improvement. It is the caſe of a young Lady who came from a very great diſtance, urged by her own fears, and the perſuaſions of her ſurgeon, whoſe letter I ſhall tranſcribe.

" Sir, Shetland, Aug. 14, 1802.

" Though I have not the honour of being perſonally acquainted with you, yet from the eminent and juſtly diſtinguiſhed character which you hold in the world, and from my own obſervation of your ſuperior ſkill and abilities, I beg you will receive Miſs N——, a particular friend of mine under your profeſſional care. She has for more than three years had an enlargement of one of the glands under the jaw, which gave her not the ſlighteſt uneaſineſs, till of late that ſhe has begun to feel occaſionally, ſome pain from it, which has induced her to take this journey, in order to have the real nature and tendency of the tumour determined; and to ſubmit to any thing you may judge moſt proper. In the full confidence of your affording her every attention in your power, I remain, with eſteem, your moſt obedient,

" JOHN BARCLAY, Surgeon."

OBSERVATIONS.

EVERY new operation, I perceive, will afford for my pupils ſome new rule of ſurgery, and prove to myſelf a ſource of inſtruction; and the various leſſons which we derive thus from experience, are ſuch as no conjecture nor previous ſtudy of the parts will enable us to anticipate; nothing but a long continued and faithful attention to practice can make a ſurgeon ſkilful, or enable him to give leſſons to others.

1ſt. I obſerve in this lady's caſe, that the gland affected ſeems to be the very gland, which after an unſucceſsful operation, grew to ſo immenſe a ſize in the caſe of Jenny Brown; and in her, though the tumor aroſe from the ſlighteſt and moſt accidental cauſe, without any cancerous diatheſis, or other malignant tendency, it proved fatal by ſuffocation, the moſt miſerable kind of death. What might have become of this lady it is eaſy to foreſee, had ſhe not been warned by her ſurgeon, and alarmed by the recent acceſſion of pain, for her own ſafety.

2d. When we are conſulted what is to be done, in any particular caſe, we are in other terms called on to prognoſticate what will be the patient's condition at the diſtance of one or two years: in the preſent caſe the gland is very large and of a ſtony hardneſs, it never can ſuppurate, it is even threatened with a cancerous inflammation, it is indeed incapable of any other; the pain requires that ſomething ſhould be reſolved on, and our prognoſtic may be ſafely grounded on this unqueſtionable aſſumption, that ſuch a tumour will not fail to grow, and that in one or two years the deformity and bulk, will of itſelf be a motive, while the ſuffocating condition of the

patient will be an abſolute reaſon for operating, however dangerous the operation may be rendered by ſuch unwiſe delay. It is moreover to be obſerved, that the gland is the ſub-maxillary gland, which has the facial artery nitched in betwixt its two lobes, not ſo inextricably indeed as the parotid is connected with the carotid artery, but in a degree to give alarm and trouble to the ſurgeon, and accompanied with a degree of danger (in the caſe of operation) which is well worth calculating.

3d. We are to regard the actual circumſtances of every patient, as a part of his caſe, and the danger to this lady, if remanded to her own country, ſo far diſtant, and ſo difficult of acceſs, is but too palpable. Should we ſpeak to her the uſual temporiſing language, and ſay, "it will perhaps get well, a ſlight courſe of mercury or cicuta may be uſeful, and time may do much, and perhaps it may be well to wait." It may happen that the gland may become ſtationary in its growth, a mercurial courſe may be of uſe, but I fear that this is in the trueſt ſenſe tampering with a tumor, and that time can do nothing but increaſe the danger. It ſeems to me but too poſſible, that this lady before ſhe can take a ſecond reſolution, and accompliſh a ſecond journey, will be ſuffocating, and in immediate danger of life: then we ſhall not venture to do that operation, which is now comparatively eaſy; for this gland being ſeated in the angle betwixt the trunk of the carotid artery and its firſt great branch, the maxillary or facial will diſtend that angle, vid. No. 48. and both the trunk and its branch will be too cloſely united with the tumor to admit of operation; or will make the operation moſt dangerous and critical.

4th. Though there is no imminent danger in the propoſed operation, the circumſtances are ſufficiently forbidding to make it far from being a matter of choice. My aſſiſtant was unwilling that it ſhould be performed without the advice of Dr. Monro, and his aſſent ſeemed rather reluctant. The tumor is of very conſiderable ſize, it is plainly the ſub-maxillary gland, as may be inferred from its ſhape, ſize, and peculiar hardneſs; not a lymphatic gland, for then moſt likely more than one would be enlarged. We muſt be reſolved to deal with this artery in one of two ways; either to diſſect it ſo from the tumor, as to inſulate the artery, and turn the tumour from under it; or ſhould this attempt threaten to embarraſs our operation, to cut it acroſs where it lies over the middle of the tumor, tying before dividing it, leſt it ſhould ſhrink back towards its trunk. No one circumſtance is ſo favourable to the operation, as that extreme hardneſs of the tumor, which makes the operation neceſſary; for that ſhews it to be circumſcribed, and to be little connected by inflammation, with the cellular ſubſtance.

NOTES OF THE OPERATION.

We had agreed either to diſſect ſo as to lay the artery to one ſide, while employed in extirpating the gland; or to tie and cut acroſs, and ſo proceed with greater freedom, in the more dangerous part of the diſſection; but, after the firſt inciſion which I made, according to the length of the jaw-bone, the inciſion being long and more free, the ſeveral parts appeared in ſo advantageous a ſtate, as to leave no doubt nor difficulty in the reſt of our proceedings. The artery preſented itſelf thus, No. 49, arching over the diſeaſed gland, much elongated and ſerpentine; ſo that, in place of embarraſſing the operation with any needleſs delicacy, or endangering the ſhrinking up of ſuch an artery towards its trunk, we paſſed two ligatures of ſingle thread under it, cut betwixt the ligatures, and then proceeded more confidently in extirpating the gland: there we found no ſuch adheſion of it to the trunk, or rather to the ſheath of the carotid, as we had reaſon to apprehend; the tumor was of ſuch a ſtony hardneſs, the cellular ſubſtance ſo looſe, the arteries ſo diſengaged from it, that, without the help of the knife, with only the ſwallow-tailed end of its handle, which I uſed as a ſcalpel, I turned out the tumor in a few ſeconds, and the tumor carrying its cellular ſubſtance along with it, the ſtyloid muſcles were left as clean, diſtinct, and bare, as, after a neat diſſection in the dead ſubject.

In regard to operations where blood-veſſels of great ſize are endangered, or actually wounded, I think I may ſafely propoſe thoſe ſimple rules to my pupils for their general conduct:

1ſt. To conſider well the anatomy of the natural parts, and the probable connections of the tumor, ſo as not to plunge unadviſedly into difficulties, which may unnerve his hand in the moſt critical moment; never to endanger any unexpected burſting out of blood, ſuch as might cauſe alarm; for, to wound an important artery, without having foreſeen the poſſibility of ſo doing, or to encounter any danger of this nature, without having approached it by ſlow and delicate diſſection, and provided againſt the ſudden eruption of blood, by concerting with his aſſiſtant, what is to be done in each poſſible caſe, would be an indelible diſgrace to the ſurgeon.

2. The ſurgeon, while he approaches a dangerous point with all poſſible circumſpection, and with precaution amounting almoſt to timidity, and tries to avoid any important artery, or is careful as he approaches it, to diſtinguiſh it by its place,

to feel it with his finger, to diſſect ſo as to avoid, or to tie it, ſhould, the moment the artery he fears, or any artery is wounded, and blood burſts out, diſmiſs all fear, then let courage and rapid execution take place of fear, or circumſpection: let him plunge his finger down to ſtop, or to catch the artery, or dive with his needle to ſurround it. If there be nerves, important nerves, as in the axilla, which are endangered by this ſtroke of the needle, he muſt be prepared to decide inſtantly how far the danger authoriſes ſuch a plunge. If the long courſe of the wounded artery gives him room to ſeek it at another point, he muſt be prepared inſtantly to run his knife backwards along its courſe, or to cut with his ſcalpel, or plunge with the needle, into the hollow where it lies, without a moment's delay: a man who is not prepared for this by his knowledge of the blood-veſſels, and able for it by his courage and preſence of mind, is no ſurgeon.

Thus, circumſpection and daring have each their peculiar point of time; neither is to be regarded as forming a prominent feature in the temper of the ſurgeon; but that knowledge of parts, and firmneſs of mind, which preſcribes circumſpection and caution in approaching a dangerous point, will enſure confident and rapid execution, when danger is actually preſent.

3. The ſurgeon, when he ſpeaks of courage, muſt always diſtinguiſh the diſcreet and deliberate boldneſs which belong to his profeſſional character, from the perſonal bravery, or fool-hardy contempt of danger, which he is entitled to indulge in his own individual caſe; it may to himſelf ſeem heroic, or gallant, to endanger, or to throw away life; but, when reſponſible for that of a fellow-creature, he has no ſuch latitude of ſentiment or action, and muſt be guided, not by feeling, but reaſon. So ſtrictly is he bound to avoid danger, that he is actually bound to afflict his patient with protracted and ſevere pains, to enſure his ſafety; and to endure the unmerited reproaches of whatever ignorant or ill-judging perſon may chooſe to report his operations as awkward or ſlow. Diſpatch and a ſhow of dexterity will ever be a poor apology for endangering life;—and pain, a bad reaſon for hurry or perturbation, where loſs of blood may be the forfeit: the pain of pulling the ſtump of a corrupted tooth is more ſevere and often more protracted than that of the moſt important operations; the pain of ſimple inciſions is never deadly.

4. Protracted pain is attended with danger, only in thoſe operations where, from ſuch torturing inflammation of ſome internal part, or great cavity, as the knee-joint, the thorax, the abdomen, may enſue: and thence, as there are no blood-veſſels

which a good ſurgeon can endanger, in performing lithotomy, and as the ſtriking the bladder ſecurely depends upon a perfect knowledge of the parts, he muſt ever be accounted the beſt ſurgeon, who performs his operation the moſt rapidly, becauſe he does ſo moſt ſecurely: here too a ſkilful man is anxious to operate rapidly, becauſe he knows that to ſave pain is to prevent inflammation, and he has ſeen too often, the mangling of unſkilful operators, the turning of the ſtone in the bladder, and tearing it along, occaſion abdominal inflammation and death *.

* Theſe obſervations will derive ſome value, from the following narrative:—It happened in one of the firſt hoſpitals in Europe, that from a moſt culpable negligence in not ſecuring this facial branch of the carotid, the patient was every way endangered, firſt by loſs of blood, which flowed profuſely, and uncontroled except by the tightneſs of thoſe ſtitches with which the outward wound was drawn together: ſecondly by ſuffocation, from the blood being injected impetuouſly into the cellular ſubſtance of the neck and throat. The narrative contains, not an avowal of a miſtake in judgment, but a confeſſion of negligence, which I think might have been ſpared, ſince it conveys no uſeful leſſon to the young ſurgeon, and is a blunder too groſs and palpable even to be committed a ſecond time. The narrative I am about to lay before you, reminds me of nothing I have ever ſeen in practice, except the awkwardneſs of a very petulant man, who refuſing to tie the ſpermatic cord in the uſual manner, would ſecure its artery no other way than by taking it up apart, on the point of his tenaculum; and being really very mal-a-droit, he permitted the ſtump (I may call it) of the ſpermatic cord, to ſlip from betwixt his finger and thumb, while pecking with his tenaculum at the artery; the cord was ſuddenly retracted within the ring; the ſurgeon had actually miſſed the artery, and yet was ſo diſingenuous as to affect to believe it ſecure; the patient was laid in bed; and in about two hours, being awakened from his firſt ſleep with a ſenſe of diſtenſion and pain, we found upon undoing the bandages, the ſcrotum enormouſly diſtended, and the ſkin of the thigh and abdomen injected with it.

Here follows the caſe I have juſt alluded to,—"A man came to St. Bartholomew's hoſpital from Oxfordſhire, with three diſeaſed lymphatic glands, each of the ſize of a very large plumb. They were ſituated beneath the baſis of the jaw, upon the mylohyoideus muſcle. They reſiſted the attempts which had been made to diſcuſs them; and had not been removed from an apprehenſion that a dangerous hemorrhage would take place in the operation. The glands had gradually, though very ſlowly, attained their preſent magnitude, for the diſeaſe was of fifteen years' duration. The ſurrounding parts were not affected. Sir Charles Blicke undertook and accompliſhed the removal of the diſeaſed glands, the ſtructure of which was exactly ſuch as has been deſcribed. This caſe is related in the firſt place, as it ſhews moſt clearly the uſual characteriſtics of this ſpecies of diſeaſed ſtructure; which are thoſe of ſlowly increaſing, of not being prone to inflammation or tending to ſuppuration.

"It may not be improper to mention, though it is irrelevant to the preſent ſubject, that, in the operation, the external maxillary artery was unavoidably divided. It did not, however, bleed immediately after the operation, ſo that this circumſtance was not perceived; and the edges of the wound were brought together by one ſuture, and accurately and firmly cloſed by ſticking-plaſter. Shortly afterwards the patient felt a ſenſe of choaking, which increaſed to a ſtate of almoſt actual ſuffocation. Indeed it ſeems pro-

There is another ſpecies of tumor, of a complexion the moſt oppoſite poſſible to this; a veſicular tranſparent tumor, ſeated on the tongue: as the hydatid of the teſticle, brain, liver, &c. was long ſuppoſed to be a mere enlargement of a lymphatic veſſel, this clear veſicular tumor on the tongue has been ſuppoſed to be a mere diſtenſion of the ſublingual ducts, which are indeed delicate and tranſparent, and lie in this direction beneath the tongue: it is becauſe I am conſcious that no deſcription can repreſent appearances ſo delicate or peculiar, that I introduce frequent ſketches: that marked No. 48, is the ſketch of this diſeaſe, as it appears very frequently in children. No. 49 repreſents the ſame diſeaſe, as it appeared in a ſtrong luſty young woman of five-and-twenty years of age. The firſt ſketch was made from an infant on the breaſt; the tumors had continued for ſeveral months, had been punctured three times, but returned inceſſantly, and had grown to ſuch a ſize as to prevent the child ſucking, by turning the tip of the tongue away from the nipple: it conſiſts of three veſicles (a b c), of which (a and b) lie in that place and direction which correſponds with the place of the ſalivary duct, but (c) marks a third veſicle affecting more the tip of the tongue, and demonſtrating how futile this common idea is, for this third veſicle lies altogether out of the courſe of the ducts. Theſe veſicles are merely accidental; they are ſtationary, which they would not be if they were dilatations of the duct; they pour out no more fluid, than what the veſicle itſelf contains, which would not be ſo if they were connected with the ſalivary gland; upon being punctured they riſe again in a week to their original ſize: this had been ſo punctured, and had returned three ſucceſſive times. A more ſingular appearance cannot be ſeen than ſuch a pure and pellucid veſicle, project-

bable that this might really have happened before any one could have got to his aſſiſtance, had not ſome of the plaſters fortunately given way, and afforded ſome diſcharge to the blood: for a very great quantity of coagulated blood had collected within the wound, and compreſſed the trachea and pharynx to a greater degree than would readily be believed by thoſe who had not witneſſed the fact. This circumſtance is mentioned to ſhew the impropriety, when there is any chance of hemorrhage, of cloſing wounds ſo ſtrictly by ſticking-plaſter, as to allow no exit to any blood that may be effuſed; and it is particularly unſafe in circumſtances ſimilar to thoſe of the foregoing caſe. If the hemorrhage be but ſmall in quantity, and the eſcape of the blood be prevented, it ſeparates the ſides of the wound which ſhould lie in cloſe contact, and thereby prevents their immediate union; and, if it be conſiderable, it deſerves to be remarked, that, ſo far is the compreſſion which the confined blood muſt make on the arteries, from which it was poured, from ſtopping the bleeding, that it ſeems to be a ſtimulating cauſe, exciting an hemorrhagic action in the veſſels. This remark is manifeſted by the preſent, as well as by many other caſes in ſurgery."

ing from the red and moiſt ſurface of the tongue; it is harmleſs, and ſeldom in child or adult exceeds the ſize or the proportion, at leaſt, which I have repreſented in this ſketch; it is ſtationary, for I have ſeen it continue in children, or in young people, for years, without harm; when ſlit open, it leaves no ſore, nor even a diſcernable mark, but in a week it is juſt what it was before: I have found no way of ridding the patient of this, which, in a child is but an inconveniency, but in an infant prevents ſucking, but to transfix the veſicle with a little hook and cut it freely out with ſciſſars.

A proper tumor of a ſalivary gland is more frequent in the adult, and is a truly formidable diſeaſe; for the ſalivary glands are incloſed by the muſcles of the throat and tongue, the ſublingual gland eſpecially, which lies under the tongue, is covered by the genioglofſi and hyoglofſi muſcles, it is thence ſo inveſted with thick maſſes of fleſh, and ſo compreſſed, that, when it falls into diſeaſe, not even ſuppuration can give relief; the collected fluid, whether pus or ſaliva, cannot make its way through ſo great a thickneſs of parts; it continues for years, and, if idly punctured, without any care being taken to obliterate the ſac, or diſtended part of the gland, repeated diſtenſion of it, accompanied with inflammation, ſo thickens the root or vaſcular part of the gland, that it grows into a ſolid tumor, ſometimes fatal, by compreſſing the throat and tongue. Miſconduct in not diſtinguiſhing ſuch tumors, in not obliterating very carefully the cavity of all ſacculated tumors of the neck, and in not preventing the formation of firm and indiſſoluble roots, or baſes, is an error ſo very frequent that I think I cannot do you a greater kindneſs, than to lay before you a few examples as documents.

" Margaret Murray, a woman about 50 years of age, had crawled from one of the miſerable Edinburgh cloſes into the Infirmary, aſthmatic and ſuffocating, with one of the moſt formidable and bulky tumors I had ever ſeen; it reſembled that of Jenny Brown in ſituation and nearly in ſize, but its nature was altogether different. Her's was throughout of a ſtony hardneſs; this, though of a degree of hardneſs reſembling a cartilage, was hard only on its ſurface, while there was within an obſcure fluctuation, which determined my opinion both of its nature, and of what ſhould be done. The tumor was as big as the patient's head, it ſtuck cloſe under the jaw, and ſo compreſſed the throat that the poor creature lay gaſping for breath; the leaſt neceſſary motion in putting out her hands, or ſtruggling to raiſe herſelf, threatened ſuffocation; her eyes were ſtaring, her noſtrils wide dilated, and her hands graſping every thing near her as if for help; her friends ſupported her per-

petually in the recumbent poſture; her face was livid, and the lips purple with ſtagnant blood; the tumor itſelf was univerſally lurid, or of a deep purple caſt, as if verging towards gangrene; and indeed I doubt not if it had been poſſible for the woman to have ſurvived in this condition, it muſt have fallen into gangrene; it ſeemed ſo ſolid withal, that the ſurgeon was doubtful what ſhould be done, and refuſed to puncture it. My importunate repreſentations at length prevailed, and, at an irregular hour, and in no very regular way, it was punctured; a trocar too ſmall for ſuch a purpoſe, was plunged into the tumor; the matter which flowed was thick and ropy, like that which is moſt frequently diſcharged from a diſeaſed, ovarium; it reſembled ſago made with port wine; about two pounds flowed without any ſenſible diminution of the tumor. It was expected, that this firſt diſcharge, and the thinner gluten which afterwards flowed, would give relief; but thoſe who indulged ſuch an expectation did not recollect, that to produce a ſecretion ſo profuſe, a great maſs of vaſcular ſubſtance is required; and the conſequence of permitting a gelatinous collection of matter to attain to ſuch a ſize is, that the veſſels by which it is ſecreted, not being, as in a caſe of ſuppuration, ulcerated or deſtroyed, the ſtool or baſis, conſiſting of thoſe veſſels is conſolidated into a tumor; there is a ſac indeed, which may be emptied, but there is alſo a ſtool or nucleus to that ſac which cannot be diſcuſſed, which indurates more and more, and actually increaſes in ſize as ſoon as the ſac is emptied, and the ſurface expoſed to ulceration: thus the ſtool of a fluid tumor becomes itſelf a ſolid one; and I have ſeen the imprudent treatment of ſuch a ſac eſtabliſh a ſolid tumor, ſo large as to impede the motions of the jaw, and threaten ſuffocation, yet too intimately connected with the great veſſels and nerves to be extirpated. So it was in this poor woman; there was no diminution of the tumor, not even a temporary relief from the ſuffocation, though the matter continued, while ſhe ſurvived, to run from the opening thin and pellucid, like ſaliva. She lay reclined, always ſtruggling for breath, and ſometimes attacked with violent aſthmatic paroxyſms; the jaws almoſt entirely cloſed; the mouth continually open; the noſtrils dilated; and the ſtupor, which ſuch difficulty of breathing cauſes, increaſing every moment, and her ſwallowing being equally difficult with her breathing, ſhe expired in the fourth week."

Timid and irreſolute ſentiments on the part of the ſurgeon, often bring the patient into thoſe deſperate circumſtances: one ſurgeon confidently and ſenſibly adviſes that a tumor ſhould be unrelentingly opened; affirms that an inciſion, ſince it is inſtantaneouſly performed, cannot be much more painful than a puncture,

which is but a momentary pain, and proteſts that, by inciſion is the only way in which the ſac can be obliterated, and a tumor, more formidable by being more ſolid than the firſt, prevented from growing: another ſurgeon contends, that, in a ſac containing merely a fluid, a puncture will ſuffice; this opinion is too flattering to the little fears of a patient, not to be received; the puncture is made, and the patient becomes the more credulous, ſince the tumor diſappears; but it returns again, and is again punctured, till, in the courſe of a few months of expectation, and, after various trivial operations of this nature, the baſis, probably the body of the gland itſelf, is hardened into a ſolid tumor, and then not even that operation, which would have ſucceeded at firſt, not even the ſlitting it open and ulcerating with eſcharotics, whatever ſurface ſtill remains, will prevent its continued growth.

Though I find ſalivary tumors uſually filled with a pellucid, gelatinous fluid, I have found them not unfrequently filled, with a mixed matter, reſembling honey, or rather reſembling muſtard, and conſiſting of a tenacious, gelatinous matter, mixed with grains and lumps of a bright yellow colour, and an intolerable ſmell. I have taken notes of one caſe of this nature in a young woman from Berwick, whoſe native peculiarity of accent, had got a ſingular aggravation, by ſuch an uncouth obliquity and imperfect motion of the tongue, as conveyed the notion of her attempting to chew, and turn each vocable with her tongue before ſhe proceeded to ſwallow it, in place of uttering it. This was produced by a tumor of very great ſize, and of a character ſo peculiar as plainly to denote its nature: it conſiſted in a vaſt collection of matter in the ſub-lingual gland, and as that gland is covered by the whole thickneſs of the tongue within, and by the mylo-hyoidæi muſcles without, and bounded by the line of the jaw-bone, it had the following ſingularities of character: it could not be diſtinguiſhed as a tumor, but had rather the appearance of a general ſwelling of the lower part of the face, jaw, and neck, ſuch as often accompanies ſevere tooth-ache or mumps: upon laying the hand upon the outſide of the neck, below the lower jaw-bone, the whole hand was filled with a ſwelling, apparently ſolid, but ſo little convex or circumſcribed, as to reſemble in no degree the tumor of any particular gland; and yet ſo limited and ſo firm, as not at all to reſemble the general tumefaction proceeding from tooth-ache. Upon introducing the finger into the mouth, you found the tongue raiſed, turned edge-uppermoſt, and preſſed entirely towards the left ſide of the mouth, the external tumor being in the right ſide; upon preſſing the fingers very firmly down by the ſide of the tongue, and re-acting from without, you could ſenſibly perceive, not ſo properly a

fluctuation as an elaſticity, which implied the preſence of a fluid; the tumor ſeemed elaſtic, like a foot-ball, but with a degree of tenſion which made it ſeem almoſt ſolid. It was by comparing a variety of circumſtances, eſpecially the original place and ſlow growth of this tumor, that I confidently referred it to the ſub-lingual gland; in this I had the advantage of the ſurgeon under whoſe particular care ſhe was, but I did him the juſtice to ſend her back to him again and again, expreſſing my opinion, and my wiſh at the ſame time, that he ſhould do whatever he might imagine right. By good fortune ſhe called upon me the day ſhe was to return home, nothing being as yet done to the tumor, but ſupplied with abundance of bliſters and plaſters to apply at a fit opportunity to her throat: I felt now that profeſſional ceremonies ſhould give way to eſſential charities: I placed her in a chair, and almoſt without her conſciouſneſs, at leaſt before ſhe was aware, ſtruck a fine bleeding lancet deep into the tumor by the ſide of the frenulum linguæ, where, from the firm compreſſion of the ſurrounding parts, the matter, though too groſs to paſs freely through ſuch an opening, was ſpewed out from the orifice in a manner expreſsly reſembling that, in which yellow paint is ſqueezed out from the bladder upon a painter's palette. It was of a deep ſaffron colour, thicker than muſtard, mixed like gruel with ſeed-like particles, and extremely fœtid. I knew that the tumor was not emptied, though the outward ſwelling was almoſt gone; but I alſo knew, that, even though I ſhould not enlarge the opening, the ſecond ſecretion from the ſurface of the ſac, which is in all caſes thin, would dilute and waſh out whatever viſcid matter remained; and, when ſhe ſaw how ſuddenly my prognoſtic was fulfilled, ſhe expreſſed a perfect confidence in whatever I predicted, and a perfect willingneſs to ſubmit cheerfully to whatever I propoſed to do. Next day I introduce the point of the probe-biſtoury into the orifice made by the lancet, and knowing that the lingual artery lies on a lower level, imbedded among the muſcles, and running along the lower ſurface of this tumor, while I had over the point and blade of my biſtoury nothing but the inſide membrane of the mouth much thickened, I run it fearleſsly, and, at one ſtroke, as the leſs painful way, along the whole length of the tumor, when the thickeſt of the yellow mucus flowed freely, or was raked out with the points of the fingers, and the handle of the biſtoury; and the tongue deſcending now to its natural level, was in a capacity once more of delivering the peculiar dialect of her native city in all its purity.

So tenſe and apparently ſolid was this tumor, in conſequence of the compreſſion of ſo many ſurrounding muſcles, that her ſurgeon miſtook it for a ſolid and ſtru-

SKETCHES OF TUMORS OF THE NECK & JAWS.

PEGY HALL

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JEAN BRICE

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mous ſwelling. I reckoned that in this, as in all caſes of ſacculated tumor, the ſecond ſecretion, which is thinner, would waſh out the thicker mucus, and I was not deceived, but ſhe left me too early for me to witneſs the obliteration of this ſac. I find it in all ſuch caſes a matter of ſome importance, eſpecially in a girl, to anticipate the outward ſuppuration of any ſacculated tumor, by puncturing it, though to a great depth within the mouth, and under the tongue, and equally neceſſary, to be at pains in preſerving the opening, and obliterating the ſac; a ſlight miſconduct in this reſpect, occaſions much diſtreſs to the patient, and much ſuperfluous labour to the ſurgeon; among the examples of this which I have had occaſion to remark, the following is the moſt inſtructive.

" The drawing of Peggy Hall repreſents a tumor which, in all its ſtages, and for a courſe of three years, was ill underſtood, and worſe treated: the drawing repreſents a fluid ſacculated tumor of a great ſize, bearing upon it the mark of a very unſkilful attempt to open it: ſhe was a ſtout and luſty girl about 22 years of age; the tumor occupied all the left ſide of the neck, from the lobe of the ear and angle of the jaw, quite to the ſternum, diſplacing the maſtoid muſcle. This, like the tumor of Jenny Brown, aroſe from that ſlight inflammation, which follows the extraction of a tooth. More than two years ago, after being diſtracted with toothache, ſhe had two corrupted teeth pulled from the lower jaw, and ſhe diſtinctly remembers, that, two days after the extraction of the ſecond tooth, ſhe was ſenſible, upon undoing the flannels in which her ſwoln and inflamed face had been for ſome time wrapped up, that there was a little lump, about the ſize of a ſmall plumb; it lay under the angle of the jaw, and has never ceaſed to grow, and has now, without the ſlighteſt pain or change of colour attained the ſize here repreſented.

" In the month of April, 1799, ſhe was directed to apply ſome kind of plaſter; in the month of May, ſhe was adviſed by Dr. Monro to have it opened; in a few weeks after, this was attempted by the ſurgeon of the village in which ſhe lives, who made a large inciſion, but being ſoon alarmed, he laid aſide the knife and lancet, and proſecuted his work rather by boring than by cutting; he tried with probes and directories to make good his way into the ſac, but, having puſhed them very deep, and toiled half an hour in vain, he abandoned his purpoſe: it is the ſcar of this ill-concerted operation, that is ſeen on the face of the tumor. The certain conviction that a reſpectable ſurgeon did, three months before we ſaw it, dig to a conſiderable depth, without finding matter; the manifeſt proof of his good will to

reach it in this large ſcar left after his operation, and the firm adheſions under it of the ſkin to the maſtoid muſcle; the difficulty too, of diſtinguiſhing fluctuation in a very tenſe ſac, made more tenſe by the general conſtruction of the platyſma myoides, and the ſtrong preſſure of the great maſtoid muſcle, was enough to diſconcert us, and impreſs a belief that this tumor could not be of a fluid nature, and indeed theſe conſiderations induced almoſt every ſurgeon who had a ſhare in the conſultation to pronounce, that the tumor contained no matter, and ſhould not be punctured. But to decide thus is to forfeit the natural advantages of our own ſkill, and indeed is little better than yielding our own deliberate judgment in favour of the opinion of a man plainly ignorant and aukward: ſo far from truſting any thing to his judgment, or believing that he miſcarried, only becauſe the tumor was ſolid and not fluid, I think it no difficult matter to demonſtrate the kind of aukwardneſs, which made him miſcarry in his operations.

" The tumor is diſtinctly, to my apprehenſion, a great ſac of fluid ſecretion; there is nothing doubtful in the caſe: this ſac lies under the platyſma-myoides, and under and before the maſtoid muſcle; the belly of the maſtoid, being raiſed upon the bag or tumor, feels ſoft and flaccid, and might have ſeemed to an unſkilful ſurgeon, to form a part of the tumor; by making his inciſions over the belly of the muſcle, he could not penetrate to the ſac otherwiſe than through the body of the maſtoid muſcle; having cut to a conſiderable depth among ſolid and quivering fleſh, he became alarmed; willing ſtill to penetrate farther, and yet without danger, he bored with his finger, cut a little obliquely with his knife, and bored a little more with his directory, till having buried it apparently in the tumor to the depth of three or four inches, he believed, and to the ignorant relations and patient, ſeemed to prove, that there was no fluid in the tumor, while there was nothing ſingular in all this but his own aukwardneſs: he had penetrated entirely under the belly of the maſtoid muſcle, puſhing his probes obliquely betwixt it and the ſac; to avoid the great veſſels of the neck, he wrought obliquely backwards; by cutting obliquely backwards, he made good his way under the belly of the maſtoid muſcle. The young woman endured the diſappointment, and ſuffered the tumor ſtill to extend, not without great inconvenience and deformity, for ſeven or eight months: the operation being then performed more correctly and confidently, every circumſtance tended to confirm the notions I had formed of this aukward proceeding: the ſurgeon who now operated was timid in his manner of performing the operation, and careleſs in conducting the cure. The inciſion through the ſkin only

was freely made; the inciſions through the platyſma myoides were made timidly, the fleſh of its fibres retracting and quivering as they were cut: the ſac then burſt from betwixt the divided fibres of the muſcle, white and tranſparent. I could almoſt diſtinguiſh the fluid through it; and this hydrocele-like ſac being cut, ſeveral pounds of thin ſerous fluid guſhed out: then the long iron probe was paſſed acroſs the cavity of the tumor, and its point cut upon at the anterior edge of the maſtoid muſcle; in ſhort, near the place of the former inciſions; whereas, to lie acroſs the tumor, the point ſhould have been cut out behind the belly of the maſtoid, and then the ſeton or cord would have more effectually inflamed the ſac, and obliterated the cavity.

But this girl was deſtined ſtill to ſuffer from timid practice. The ſeton, ill introduced at firſt, was worſe managed; in whatever way introduced, it ſhould have been made to obliterate the ſac; the ſac was permitted to remain always half full, its walls were never brought ſo together as to favour their adheſion, the cord was even withdrawn, and the orifice permitted to heal; the fluid was collected again to the amount of two pounds; it was again evacuated by forcing the old opening, ſlitting up a part of the muſcular ſac with a probe-pointed biſtoury, and obliterating it (a purpoſe which was very ſlowly accompliſhed,) by ſtrong injections of Port wine and ſtimulant medicines.

In the courſe of this operation of obliterating the ſac, I rectified an opinion which I had once conceived; I doubted whether this was truly a ſalivary tumor, but when I now conſidered how improbable it was that a lymphatic gland ſhould have ſo large a ſac, and ſo profuſe and ſo watery a ſecretion formed within it, or be any way diſtended into ſo delicate a ſac: when I conſidered how cloſely the gland lay under the angle of the jaw when it firſt ſwelled; and how it hardened at its baſis, while the ſac was kept diſtended by injudicious treatment, and in an inflamed ſtate; eſpecially when I conſidered the form it aſſumed, viz. the ſac, thoroughly inflamed, the baſis contracting into a ſolid and lumpy tumor under the line of the jaw-bone, I could no longer entertain a doubt of its nature, but ranked it with ſalivary tumors.

The cure of this girl, which was protracted by unſkilful treatment to ſix months, ſhould have been accompliſhed in three weeks: and, while the ſac continued pouring out matter from its thickened walls, and hardening into a ſolid tumor under the jaw, the girl was in danger of having eſtabliſhed an incurable and growing diſeaſe;

for a tumor ſo ſituated, and proceeding from ſuch a cauſe, could never, by the moſt dextrous operator, have been diſſected away from the neck and jaws.

If theſe ſacculated and ſolid tumors of the neck and jaws are intereſting from their frequency, there are others ſtill more ſo from their danger: they are carefully to be diſtinguiſhed from other tumors, eſpecially from thoſe of an aneuriſmal and varicoſe nature; and I eſpecially requeſt you to remember, that, of the tumors which occupy the forepart of the trachea, and are connected with the vaſcular ſyſtem of the thyroid gland, a great proportion are venous: aneuriſm of the carotid artery is indeed ſo rare a diſeaſe, that it is not certainly known whether ſuch a diſeaſe exiſts, it abſolutely is not underſtood how or from what cauſes the patient dies. I ſaw a young woman not 24 years of age die of this diſeaſe, in the ſixth week after the dilatation of the artery began. She had a cough and quickened pulſe, and her diſorder was miſtaken for a cold: ſhe had great difficulty of ſwallowing, and it was miſtaken for the effect of ſore throat and ſwelling of the glands: ſhe had a conſtant ſtupor, and it was aſcribed to fever: but look to the drawings I have made of this tumor, and you will be conſcious, that the compreſſion of ſuch a tumor lodged cloſe upon the trachea, and braced down upon it by all the ſtrong muſcles of the throat, and under the compreſſion of the jaw-bone, could not fail to excite at once difficult deglutition, dyſpnæa, and ſtupor: theſe were the ſymptoms of which ſhe died.

" Elizabeth Wallace, a fleſh cadie, (a woman ſerving as porter in the butcher market,) no more than twenty-four years of age, had led a very diſſolute and abandoned life: about ten days before ſhe took to bed in the Infirmary, ſhe had a cold, or the ſymptoms of cold; but whether the exertions of coughing had ſtarted the carotid artery, or whether the poſture in which theſe people carry their heavieſt burdens, ſtrapping their baſkets over their forehead, and ſtraining with the neck, had injured the artery, the dilatation of which, and its preſſure had excited the cough, we now can never decide. It was about that period ſhe firſt obſerved the lump, which, when ſhe ſought an aſylum in the Hoſpital, was yet no bigger than a walnut. She had no other complaint beſide cough and difficulty of breathing, but the cough was at times ſo violent, and accompanied with ſuch ſtraining, that the nurſe who watched her, pitied her. At this period the difficulty of deglutition was ſlighter, inſomuch that ſhe could ſwallow both meat and drink, yet ſlowly and painfully.

" About ten days after her admiſſion into the Hoſpital, the ſwelling which had increaſed from day to day, was prominent and viſible; ſhe ſwallowed with the utmoſt difficulty; the tumor was perſeveringly miſtaken by the phyſicians for the ſwelling of a ſore throat, was embrocated by day with ſtimulating oils, and by night was covered with a poultice.

" The tumor, by the twenty-fifth day of her diſorder, had attained the ſize of the fiſt; the difficulty of deglutition, which had increaſed with the increaſe of the tumor, was ſuch that ſhe was no longer able to ſwallow ſolids; ſhe could force over only a little bread, honey, or gruel: by the thirtieth day even that was no longer practicable; and ſhe tried, not always ſucceſsfully, to ſuck up through the ſtalk of a tobacco-pipe a little thin gruel, or warm milk.

" During the laſt week of her exiſtence, even this poor reſource failed her; whatever ſhe attempted to ſwallow guſhed inſtantly upwards through the noſtrils, with moſt imminent danger of ſuffocation: the ſix days preceding her death, ſhe refrained from all ſuch unavailing attempts, and was ſuſtained in ſome degree by injections of broth and jellies; ſhe pined away, and, after lying ſome time in a lethargic ſtate, expired without any kind of ſuffering. Never have I ſeen a tumor whoſe character was ſo ſtrongly pronounced; perhaps this aneuriſm (like that which is but ſlightly mentioned, I know not where, of a German nobleman, who, in the exerciſe of hunting, turned his head ſuddenly and violently to one ſide, and had thence a fatal aneuriſm of the carotid artery,) was cauſed, and the carotid in this woman injured in its coats, by ſome violent ſtrain in carrying her baſket: the ſmallneſs of the tumor, its place directly under and behind the angle of the jaw, its manifeſt connection with the carotid artery, its riſing with each pulſation of the carotid, and getting a ſtronger pulſation in proportion as its ſize increaſed, proved, to my entire ſatisfaction, that it was a true aneuriſm, in which the ſac filled by the carotid trunk gave a heavier pulſation in proportion as it was dilated. I never ſaw this poor creature in any violent paroxyſm of coughing; I found her always lying with her head low, ſtill, and flat, apparently oppreſſed, languid, and unwilling to ſpeak, ſeemingly in a ſtate of ſtupor, perhaps only languiſhing for want of food. The tumor occupied the ſide of the neck, filled all the angle of the jaw, the whole hand ſpread out upon it juſt contained it: the pulſation was deep, heavy, and impreſſive; you could not but feel an awful preſentiment that it muſt ſoon burſt. She lived no longer than ſix weeks from the very firſt of her complaints; we ſaw the aneuriſm in its incipient ſtage, and watched it through this ſhort period in which

it increaſed to this fatal ſize. To know that ſuch a diſeaſe does exiſt, (for this has been doubted,) is enough to put us on our guard, and we cannot wonder, that the preſſure of a diſtended artery, which in the ham deſtroys the knee-joint, and makes the bones carious, ſhould thus compreſs the flexible tube of the pharynx, and prevent ſwallowing. This girl, Wallace, except the cough, had no other complaint, and ſlept away as one ſtarved to death." Of the two ſketches which accompany the caſe, the firſt ſuggeſts the deſign of tying the carotid artery, while the caſe related by Petit in the Acts of the Academy of Sciences, anno 1765, vindicates the project *. In the ſketch, No. 1. the relative poſitions of the artery, vein, and

* "Au commencement de l'année 1758, M. Vieillard, médecin de Paris, homme d'eſprit et très inſtruit dans ſon art, s'aperçut que M. ſon frère, avocat du roi au bailliage de Saint-Lô, portoit ſous le côté droit de la mâchoire inférieure une petite tumeur à laquelle perſonne n'avoit encore pris garde.

"Ce mal étoit très léger en apparence, et cependant M. Vieillard le médecin s'en alarma, au point de dire à quelques perſonnes qu'il regardoit ſon frère comme un homme mort. Ses craintes qu'il ne chercha point à diſſimuler, ne paſsèrent point dans l'eſprit de ſon frère, celui-ci prétendoit que ſon mal n'étoit qu'une bagatelle, et il ne voulut pratiquer aucun des remèdes qui pour lors lui furent conſeillés.

"Mais voyant, deux mois après cette première époque, que la tumeur s'étoit accrue de moitié, il conſentit à appliquer deſſus un bandage propre à la contenir; il n'en recueillit aucun fruit, la tumeur continua à s'augmenter; le malade ſe dégoûta du bandage, et le quitta: il s'agiſſoit de trouver un autre moyen de s'oppoſer au progrès du mal. On aſſembla dans cette intention pluſieurs médecins et chirurgiens; M. Bourdelin, membre de cette Académie, étoit du nombre des conſultans; j'en étois auſſi. Par l'examen que nous fimes de la tumeur, nous reconnumes qu'elle étoit ſituée un peu plus bas que l'angle de la mâchoire inférieure, qu'elle étoit de la groſſeur d'un œuf de pigeon, qu'on y ſentoit une pulſation très-manifeſte, et quand on la comprimoit, on la faiſoit diſparoître; mais bien-tôt après elle ſe repreſentoit comme auparavant. Preſque tous les conſultans furent du même avis ſur la nature de la tumeur: on décida que c'étoit un anévriſme vrai; les ſentimens ſe partagèrent, quand il fut queſtion de fixer préciſément le ſiége de cet anévriſme; en mon particulier je préſumois que c'étoit vers la bifurcation du tronc de la carotide, que la dilatation s'étoit faite: on convint généralement que le cas n'étoit pas ſans danger, et que, pour le prévenir, les fréquentes ſaignées étoient néceſſaires; on conſeilla de plus au malade, d'obſerver le plus grande régime, et d'éviter avec ſoin tout exercice violent tant du corps que de l'eſprit.

"M. Vieillard exécuta pendant près de trois mois ce qui avoit été décidé dans la conſultation: la tumeur diminua de moitié, et le malade ſe voyant en train de guériſon quitta Paris, pour s'en retourner à Saint-Lô.

"Ce fut lors de ce départ que M. Vieillard le médecin dit à pluſieurs perſonnes, qu'il croyoit que le reſte de l'anévriſme achèveroit de diſparoître; qu'il penſoit de plus que la cavité de l'artère elle-même s'effaceroit entièrement; et qu'alors il y auroit tout à craindre pour les jours de ſon frère: qu'il ne ſeroit pas étonné de recevoir au premier moment la nouvelle de ſa mort: l'évènement n'a que trop juſtifié la hardieſſe de ce pronoſtic ſingulier.



ANEURISM OF THE CAROTID ARTERY SKETCH 1.

ELIZABETH WALLACE.

Page 250.

Drawn by J.Bell.

Engr.d by E.Mitchell.

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nerve are diſplayed; it is a rude and haſty ſketch, made in the moment of a hurried diſſection. The points to be noted are the tip of the ear (a), the chin (b), the

" De retour à Saint-Lô, M. Vieillard jouiſſant en apparence d'une bonne ſanté, oublia les conſeils que nous lui avions donnés, il negligea de ſe faire ſaigner; il abandonna le régime et reprit ſa manière de vivre ordinaire; la tumeur n'en continua pas moins à diminuer et diſparut enfin tout-à-fait.

" Au bout de deux ou trois ans, quelqes affaires ayant appelé M. Vieillard à Paris, je le vis, je l'examinai, et je m'aſſurai par moi-même, qu'il ne reſtoit de l'ancienne tumeur prétendue anévriſmale qu'un petit nœud ſitué ſous la mâchoire, à l'endroit ou la tumeur avoit exiſté; ce nœud étoit fort dur, d'une forme oblongue, et ſans aucune pulſation; les artères temporales et maxillaires de ce côté battoient très-foiblement.

" Ce changement, qui n'avoit été attendu que de M. Vieillard le médecin, n'avoit apporté d'autre incommodité au malade que celle de prononcer avec un ſorte de difficulté, de bégayer un peu, et d'avoir la bouche habituellement remplie de ſalive, enfin de ne pouvoir tirer la langue hors de la bouche.

" Sept ans ſe ſont écoulés dans cet état, ſans que pendant tout ce temps il ſoit arrivé le moindre accident: vers la Pentecôte de l'année dernière, M. Vieillard vint à Paris en aſſez bonne ſanté, mais il étoit aiſé de s'apercevoir que ſa bouche étoit inondée d'une plus grande quantité de ſalive, et que la prononciation étoit plus difficile.

" Enfin le Samedi 24 Novembre, il fut frappé d'une forte apoplexie, dont il eſt mort au bout de quelques jours. On avoit obſervé dans les trois ou quatre jours qui avoient précedé cette attaque, qu'il étoit comme une perſonne ivre, qu'il ne raiſonnoit pas juſte, et que d'un moment à l'autre il ne ſe ſouvenoit pas de ce qu'il venoit de dire ou faire.

" J'ai fait la diſſection de ſon cadavre en préſence de pluſieurs perſonnes et notamment de M. Maloët, très-habile médecin, avec lequel j'avois vu le malade dans le tems de ſa dernière maladie: voici les choſes que nous y avons obſervées.

" Le côté droit du cerveau étoit couvert d'une ſéroſité ſanguinolente, ſous cet épanchement le cerveau étoit ſain, il n'y avoit aucun épanchement à l'exterieur du côté oppoſé, mais en ouvrant le ventricule ſupérieur il en ſortit environ cinq à ſix onces de ſang diſſous, et il reſta un caillot de ſang coagulé, de la groſſeur d'un petit œuf de poule, il étoit placé en arrière ſur les couches des nerfs optique; cette concrétion de ſang cachoit une ample et profonde crévaſſe qui s'étoit faite dans la ſubſtance même du cerveau à l'endroit deſigné; il eſt évident que cette crévaſſe et l'épanchement qui s'en eſt ſuivi ont été les cauſes determinantes de l'apoplexie dont M. Vieillard eſt mort.

" Du côté gauche, c'eſt-à-dire du même côte où tout ce déſordre s'étoit opéré, l'artère carotide et les branches qui en prennent naiſſance nous ont paru avoir un tiers plus de calibre que dans l'état naturel.

" Ce que nous cherchions ſpécialement à connoître, c'étoit l'état de l'ancienne tumeur jugée anévriſmale, et celui de l'artère carotide, à la dilatation de laquelle on avoit cru devoir l'attribuer, ainſi nous tournames notre attention de ce côté, et nous découvrimes, avec un grand étonnement, au moins de ma part, que le pronoſtic tiré par M. Vieillard le médecin étoit pleinement juſtifié, c'eſt-à-dire que l'artère carotide droite étoit complétement oblitérée depuis ſa ſéparation de l'artère fouclavière droite, juſqu'à ſa diviſion en deux branches principales, ce qui répond à peu près à l'angle de la mâchoire inférieure: en ſe bouchant tout-à-fait, cette artère qui eſt ordinairement groſſe comme le bout du petit doigt, s'étoit convertie en

deep hollow under the angle of the jaw (d), while the maſtoid muſcle (e), is laid aſide, to diſplay the artery and its aneuriſm. (f) Marks the carotid artery, (gg) the aneuriſmal ſac filling all the hollow of the neck, and that beneath the angle of the jaw; (h) marks the par-vagum, or ſympathetic nerve, accompanying (i) the great jugular vein. The ſheath of cellular ſubſtance, incloſing theſe great and important veſſels, and this nerve, the leaſt harm to which is unqueſtionably fatal, is diſſected and laid aſide. Nothing could more tempt us to a daring experiment, than the deſperate condition of ſuch a patient, nor is there any thing in the relative ſituation of theſe parts to deter us: had this woman been under my care, or ſhould ever ſuch a caſe recur, I ſhould never heſitate one moment, conſcious that the moſt abſolute bungler in ſurgery might lay aſide the muſcle with a few ſtrokes of his ſcalpel, open the common ſheath of the carotid and its accompanying nerve, and ſeparate the vein, nerve and artery ſo as to tie the latter without let or hindrance. If there be a circumſtance to create a doubt of our ſucceſs, it is to be looked for in the condition of the artery itſelf, and might be inferred by the moſt ordinary obſerver from the drawing, No. 2. where the carodid trunk (a) ſeems cruſty, hard, and brittle, and has actually given way at the point (b); there the injection was rather hard of conſiſtence, has burſt the coats, while the axillary trunk (c), though of equal diameter, ſeems delicate, limber, and ſtrong. I fear that an artery ſuch as this, (and I have examined it minutely, after taking it out of its glaſs,) could not be tied, even in ſo young a woman, with advantage. This ſecond drawing is more accurate; it is drawn from the preparation preſerved in ſpirits, and hung out for the occaſion on a board; it expreſſes more minutely the characters of the parts; (b) is the condyle of the jaw-bone, (c) ſome rugged part of the maſſeter muſcle ſtill adhering to it, (d) the coronoid proceſs by which the preparation is ſuſpended, (e)

un cordon grêle, dans l'interieur duquel on ne diſtinguoit aucun trace de conduit, et ce cordon pouvoit avoir environ deux lignes de diamètre.

" Il y avoit dans le bas de cette artère, préciſément à l'endroit où elle naît de la ſouclavière droite, il y avoit dis-je, un petit ſac anévriſmal, gros comme un noix muſcade ordinaire, ſa tunique étoit fort mince, et l'interieur de ſa cavité étoit rempli par une matière en partie graiſſeuſe, en partie ſemblable à du ſang deſſéché; on diſtinguoit encore l'ouverture par laquelle, avant l'oblitération de l'artère, ce ſac communiquoit avec la cavité de l'artère elle-même, cette ouverture étoit fort petite.

" Enfin à la place de la tumeur ci-deſſus décrite il ſe trouvoit un nœud dur, oblong, gros comme le noyau d'une olive, et qui n'avoit aucun cavité à l'interieur, les artères laryngées, ſublinguales, et maxillaires y aboutiſſoient, et avoient un calibre plus petit que dans l'état naturel."

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SKETCH II.

Drawn by J. Bell.

Engraved by E. Mitchell.

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the two backmoſt grinders, (f) the jaw-bone cut acroſs about two inches from its angle, (g) marks the digaſtric muſcle, its tendon paſſes under the ſub-maxillary gland (*) lying betwixt the jaw-bone and the tumor: (i i) marks the extent of this great aneuriſmal ſac, (k k) the manner in which the carotid artery opens into the ſac, its coats continuous with thoſe of the aneuriſm, which is plainly a dilatation of the carotid. The manner of the artery expanding into the ſac, is, you perceive, neither ſudden nor gradual; (l) denotes the open mouth of the great jugular vein cut acroſs about the middle of the neck; (m) the great ſympathetic nerve, or par-vagum, ſtill connected with the jugular vein, bending over the aneuriſmal ſac, and twining at (n) round the ſubclavian trunk; (o) is the lingual nerve diſplaced by the dilatation of the artery, and paſſing obliquely over the ſac, to go under the ſub-maxillary gland, to the muſcles of the tongue.

There is perhaps no deviation from the natural ſtructure of the human body ſo ſlight as varix, and that aneuriſm, which I have thought myſelf juſtified in naming, ANEURISM from ANASTOMOSIS, and yet there are none which occaſion ſuch ugly and fatal diſeaſes. Indeed I cannot but attribute many of the moſt mortal diſeaſes of the internal viſcera, eſpecially of the liver, ſpleen, ſtomach, rectum, &c. to this ſlight alteration of ſtructure, the dilatation of veſſels. Varix is ſimply an incommodity in many caſes, a mere over diſtenſion of the veins, productive, notwithſtanding, in the limbs, in the rectum, in the teſticle, and other acceſſible parts, of great diſtreſs: for the moſt delicate nerves twine round the veins, the over diſtenſion of thoſe of the limbs, and teſticle, occaſion a benumbed and oppreſſed feeling, pains like rheumatiſm, and diſtreſs indeſcribable, of which theſe who are not the ſufferers are inſenſible and incredulous to ſuch a degree, that complaints which are really diſtreſſing are merely becauſe they cannot be underſtood, aſcribed to a hypochondriacal temperament, and cruelly diſregarded. But ſince we know not all the effects of diſtenſion, why ſhould we doubt that the dilatation of the great internal veins, round which the great nerves of the viſcera, the lymphatic nerves, the nerves of univerſal influence are entwined, occaſion ſuffering in the internal parts, and indeſcribable yet tormenting ſenſations, ſeemingly ariſing from a wayward fancy. Are we ſure that thoſe complaints, too real, for they are often fatal, of the ſtomach and other viſcera, which ſo uniformly accompany thoſe feelings and characteriſe them, do not proceed from this mechanical cauſe?

But the diſeaſe, which I have in a former volume deſcribed under the deſignation of "ANEURISM by ANASTOMOSIS," proceeds from ſomething very different from

mere dilatation of veins: the diſeaſe is not formed, till an eſſential change of ſtructure, and a new mode of circulation has taken place. Varix is a ſimple dilatation of veins, produced by time and long uſe, by ſtricture upon the great returning trunks, by ſwelled glands, by imprudent ligatures, by pregnancy, by much walking as in ſoldiers, labourers, or running footmen; it is a dilatation unſightly at firſt, benumbing and painful next, and highly inconvenient and oppreſſive in the next degree: annihilating gradually the ſecreting parts of the glands, as in the teſticle, liver, &c. or ending in deſtruction of parts, in ulceration with hemorrhagy, when ſeated in the limbs. But aneuriſm from anaſtomoſis is an entire change of ſtructure, it is a dilatation of veins, in which they do not give way from natural debility, are not diſtended by any kind of conſtriction, but are forced and enlarged by the diſeaſed action of their correſponding arteries. Theſe happen firſt from a blow, a pinch, or a laceration; or, in conſequence of original mal-conformation, a violent action of the arteries, and a mutual enlargement of arteries and veins, while the intermediate ſubſtance of the part is, by this impulſe, and, in courſe of time, ſlowly diſtended into large intermediate cells, which are dilated at laſt into formidable reſervoirs of blood. The altered ſtructure of the part reſembles then that imaginary parenchyma, or cellular ſubſtance, which the early anatomiſts of Europe preſumed, (but indeed they pretended to prove this by injection,) was interpoſed betwixt the extremities of the arteries and thoſe of the veins in all parts of the body, eſpecially in the ſecreting viſcera. They imagined they could make ſuch intermediate cells viſible. This they entirely believed, and as yet we know not how far to condemn their theory: but in the diſeaſe I now ſpeak of, it is a fact, and we deſcribe nothing but what we can almoſt ſee. The blood is poured into the cells of ſuch a tumor by innumerable arteries, whence it has even in the beginning an obſcure throbbing, and in the latter ſtages a ſtrong and deep pulſation: from theſe the blood is continually flowing into veins, which, in place of imbibing it by abſorption, receive it with ſuch patent orifices, that in a few moments, and by a very gentle preſſure, the largeſt tumor of this nature may be compreſſed, and all its blood repreſſed into its veins, leaving only a doughy feeling of thickneſs. The veins form a conſpicuous part of ſuch a tumor, but the intermediate cells are as ſenſible a part of the ſtructure; for when the tumor is thus emptied, we feel that the blood is repreſſed from the ſacs into the veins; and, when the tumor is large with a purpled ſurface, we feel the ſacs individually prominent; when they burſt, or are punctured, we ſee the blood well out from them; and when the tu-

mor is extirpated, they ſeem to form its chief bulk: every pulſe of the heart, every action of the arterial ſyſtem and of the affected veſſels, is acceſſary to the increaſe of the tumor, which as often begins from a pinch, a blow, or ſpeck of ulceration, as from native mal-conformation; and which, though it begins in a ſpot, is deſtined to increaſe to an unlimited ſize, at leaſt, till the parts can no longer bear the force of the circulation, but become thin and burſt.

The character of this tumor reſults from its ſtructure: it is a tumor beginning often from a ſlight injury, or imperceptible cauſe; increaſing from a ſlight thickening, to a tumor of ſome magnitude, but ſtill colourleſs, void of pain, ſoft, inelaſtic, of a doughy conſiſtence, and having a woolly or cuſhion-like feeling, when preſſed and moulded under the fingers: it is greatly inflated by violent exertion; eſpecially running, ſtraining, ſtruggling, or repreſſing the breath; and it recedes ſlowly upon preſſure. But it is colourleſs and void of pulſation only in its early ſtages; when the cells are enlarged into ſacs, and the mutual communications conſequently free betwixt the extreme arteries and veins, the whole tumor pulſates diſtinctly, and, when excited by exertions or muſcular ſtruggles, it throbs furiouſly; the tumor aſſumes then a purple hue, the apices of the ſacculi, or lurid parts, become ſenſibly thin; the patient is alarmed from time to time with ſlighter hemorrhages, which, becoming more frequent from various points, and very profuſe, he is at laſt debilitated, changes his complexion and colour, loſes his health, and dies.

This diſeaſe I have deſcribed as being more peculiar to the ſkin, and frequent in the ſtomach, ſpleen, and internal viſcera; but if there be a part of the human body where this ſingular deviation from the healthy ſtructure is frequent, it is in the neck, perhaps proceeding from the looſeneſs of the cellular ſubſtance, or the peculiar activity of the arteries, or the contortions and anaſtomoſis of the veins of the neck and jaws, or from the numerous glands of theſe parts: ſuch varicoſe aneuriſm ſeems to me more frequent in women than in men. In place of philoſophizing now concerning a diſeaſe, the mechaniſm of which, I truſt I have ſufficiently explained in a former volume, I ſhall briefly lay before you ſketches of theſe varieties which I have had occaſion to obſerve. The general character I have juſt given of it will ſerve to mark its external and ſimple form: but in theſe anomalous caſes where ſuch aneuriſm is ſuperadded to other diſeaſes, where a tumor originally firm, glandular, or perhaps muſcular, congregates around it, dilated veins, and a diſeaſed cellular ſubſtance, and ulceration takes place, and hemorrhages enſue, it is ſaid to become cancerous. I doubt not that ſuch a change of ſtructure as I have

deſcribed is eſſential to the conſummation of cancer, and that its increaſing livor, hemorrhages, and final ulceration, has often much analogy with this diſeaſe.

The profuſe plexus of inoſculating veins about the angle of the jaw, and the correſponding branches of the maxillary and facial arteries, are frequently thus diſeaſed, and ſtill more frequently the veins and arteries of the thyroid gland, whoſe trunks as they run down the forepart of the neck, are dilated, and form a conſpicuous part of the tumor. Jean Bryce has a tumor of this nature, growing from her early years, the general complexion of which, its form at leaſt, and ſize, and place, and all of its character that is not communicated through the ſenſe of feeling, is expreſſed in this ſlight ſketch, No. 53. Like thoſe which occur in the ſkin, the lip, the eyelids, the rectum, &c. this began in a very ſmall tumor, having nothing peculiar in its form: it began when ſhe was a little girl, has been waxing gradually larger for theſe thirteen years, and ſeems to me almoſt purely an enlargement of the veſſels and cellular ſubſtance of the thyroid gland. It is difficult, in deſcribing ſuch a tumor, to diſtinguiſh the ſenſations conveyed by the touch and by the eye, from thoſe conjectures which imagination preſents to us in handling the tumor. The marks I have taken in my caſe-book are of a mixed nature; they are theſe; the tumor was in its early ſtage ſmall, knuckle-like, but ſoft, round, moveable, and without pulſation: whatever its nature may have been at the firſt, the ſtructure of the part is now entirely changed; the tumor is now large, ſoft, ſpongy, and ſpreads equally on each ſide of the throat, filling the whole neck, and occupying expreſsly the place of the thyroid gland: though ſoft, it rolls looſe under the ſkin, is moveable alſo in reſpect to the muſcles and internal parts, and may, on each ſide, be worked backwards under the maſtoid muſcle, eſpecially towards the right ſide of the neck, where the tumor ſeems more condenſed: it ſuffers a general ſubſultus, or ſhock, from each ſtroke of the carotid arteries, but it has alſo a particular and diſtinct pulſation within itſelf, which, though never intermitted, is yet more ſenſibly felt when the blood contained within it is repreſſed through the veins into the general courſe of the circulation; for, while the cells of the tumor fill again, the blood ſeems, at firſt, to ooze or pour inſenſibly into the tumor, but, when it is a little filled, the ſtroke of the arteries which are filling it begins to be felt, and, as it fills, the pulſation ſtrengthens till, being completely injected and become tenſe, there is a deep and ſtrong throbbing in every part of the maſs: in this particular caſe, there is much accumulation of ſolid matter, i. e. of thickened veſſels and cellular ſubſtance, beſides the maſs of circulating

blood: the proportion of both can be distinctly perceived, for, by handling, and doughing the tumor, and repressing the blood, it can be so much of it repressed into the veins, as to diminish its size by two thirds; but no force can repress it entirely, as in smaller tumors, or in varicose aneurisms. When the blood is repressed, the loose doughy feeling of cellular substance and dilated veins is more sensibly felt, and is perceived to form the chief mass, and especially the basis of the tumor: when the blood is thus repressed, you can distinguish, by pinching strongly, a thick and solid sac within the skin, and quite unconnected with it. Besides the other intimations of its connection with the thyroid gland, and the whole vessels and substance of the throat, I can plainly distinguish the thyroid arteries running long and tortuous over the sides of the tumor *, as if they descended from under the chin, and then spread over the sac, (so far are these arteries displaced from their natural course,) they divide, upon the surface of the tumor, into lesser, yet very perceptible twigs, then dive into its substance, and lose themselves; while the external jugular veins, dilated both in their trunks and branches, run tortuous over its surface, especially down the middle of the neck.

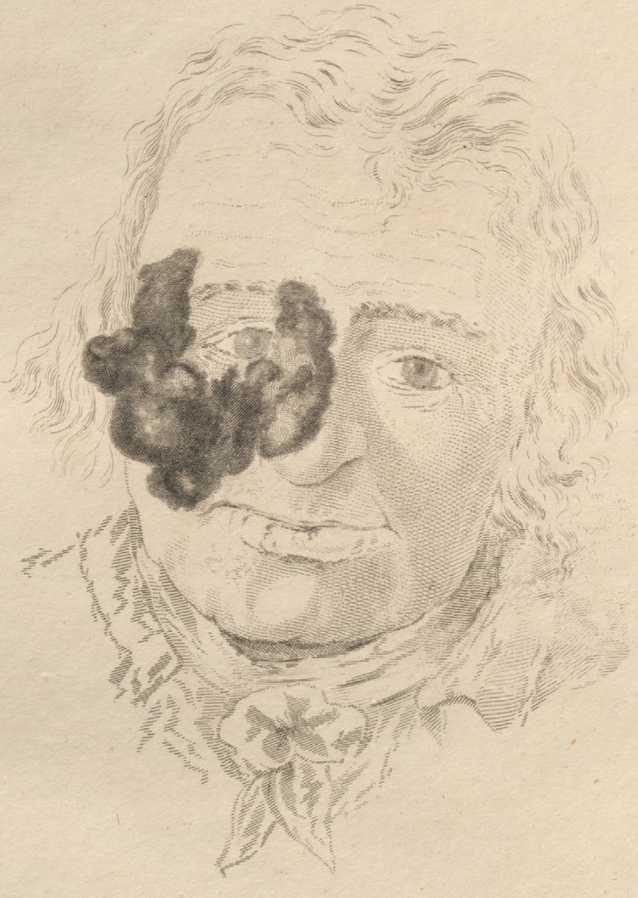
The whole tumor, when voided of blood by continued pressure, has the puffy feeling of varicose and dilated veins; when distended by the reflux of blood, it has the firm elasticity of a sac full of some fluid, dense as the blood is, and having firm and fleshy walls.

These are the characters of a tumor which is to be avoided any where, but in the neck most of all: which might indeed have been extirpated in its early growth when circumscribed, small, soft, and not pulsating, by laying open this part of the neck fairly, by dissecting cautiously round the tumor, and tying its root; but now the disease has, by carrying the dilatation of veins, arteries, and cellular substance deep into the substance of the neck, become too formidable to be dissected out. The laying open the neck for the extirpation of so slender a tumor in a little girl of ten years of age, must have seemed harsh to parents had it been proposed; but how just the prognostic of the surgeon is, when he advises such an operation, never is known till years have elapsed, and the case is desperate. This girl, after enjoying a respite, not without frequent alarms, is doomed, in a few years hence, to feel the consequences of neglecting such a tumor in its early stage: the disease tends, according to my apprehension, to spread inwardly, and the first hemorrhages will be into the trachea or throat.

* The thyroid arteries were, even in their lesser branches, dilated to the size of the temporal arteries.

The ſketch, No. 54, repreſents a form of the tumor ſtill more circumſcribed, and correſponding more perfectly with that deſcription which I have given in a former volume: it is ſimilar to the preceding caſe in having begun from the girl's early years, and increaſed till now that ſhe ſeems about 28 years of age; in having a lively and ſtrong pulſation; in having a thick and ſpongy baſis, ſeated on the jaw-bone, extending into the ſubſtance of the cheek, and over the chin into the ſubſtance of the neck and throat; in having this ſtool or baſis leſs compreſſible, yet plainly filled with circulating blood, while the central parts of the tumor are more diſtinctly ſacculated, conſiſting of a wider ſpongy ſubſtance of large cells, or of ſomething like a proper ſac, from which the blood can be entirely ſqueezed out by preſſure. But it differs in being ſuperficial, in being cutaneous, or almoſt ſo, in having thin walls, and a red colour, deepening into a purple at thoſe points from which the blood burſts out: large dilated veins, two or three eſpecially like venous trunks, deſcended from the central parts of the tumor, into the veins of the neck, while the thick and fleſhy baſis of this tumor ſo encircles the jaw-bone, enters ſo deep into the ſubſtance of the cheek, and joins ſo ſolidly the neck to the jaw-bone, that, though this girl's life were the moſt valuable, (ſhe is like many I have obſerved who have theſe imperfections, an idiot,) and her circumſtances the moſt deſperate, I hardly know how it could be extirpated, ſince there is no way of effectually extirpating ſuch tumors, but by leaving not the ſlighteſt part of the diſeaſed ſubſtance behind.

But pulſation is not an eſſential, nor inſeparable characteriſtic of ſuch tumors, and it is my duty both to give you notice of this fact, and to acknowledge, with that generous temper which becomes one diſcourſing on matters of life and death, whatever errors or miſtakes I recollect in my own opinions or practice. The ſketch, No. 55, preſents one form of this kind of tumor, as it occurred in a young woman, (alſo an idiot,) about 24 years of age, big, luſty, and otherwiſe in perfect health; but being accompanied by no friends, I could learn nothing of the hiſtory of her diſeaſe. Her neck was fleſhy and fat, her cheek round and full, her features large and maſculine, and, behind the angle of the jaw, was ſeated a tumor of this ſingular character: the ſkin was thick and ſound, and altogether unconnected with the tumor; the tumor was conical, and occupied exactly the triangular hollow behind the corner of the jaw, but it was a tumor which we could not ſay it was either very ſoft, or very elaſtic, receded like a looſe, puffy, and unconſtricted hernia, upon the ſlighteſt preſſure: when it receded, you could pinch up a diſtinct



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No 56

Drawn by J. Bell.

Engraved by E. Mitchell

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SKETCH N° 57

Drawn by J. Bell.

Engraved by E. Mitchell.

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and thick ſac, which held not the ſlighteſt communion with the ſkin, or its ſyſtem of veſſels: the contents of this ſac could be almoſt diſſipated by preſſure, and no ſolid nor ſpongy baſis could be felt at the deepeſt part of this ſac, nor could the ſlighteſt degree of pulſation, or whizzing noiſe be perceived, when the fluid returned into the ſac. The caſe ſo entirely reſembled that of Peggy Hall, viz. a ſeemingly thin and ſerous matter, contained within a large and flaccid ſac, that I entirely believed ſo. Although the characteriſtic of the almoſt total receding of the fluid was too marked, and particular, not to have excited ſtrong ſuſpicions; yet, in oppoſition to Mr. Ruſſell, and ſeveral reſpectable and judicious ſurgeons, I believed that it contained matter, and was confident, at all events, that there was no ſhadow of danger in making the experiment of puncturing the tumor, in oppoſition to their better judgment: I made a ſlight inciſion through the ſkin, and, with the point of a bleeding lancet, punctured the ſac, and found that it contained actually blood, which ſeemed to ooze out into the ſac, from innumerable ſmall veſſels, had no arterial pulſation, and no diſtinct character by colour or otherwiſe of being venous or arterial blood; it had ſo little impulſe, as to make not the ſlighteſt ſuggilation of the neck, at the place where the puncture was made, and healed like a vein opened in bleeding. I take a pleaſure in mentioning this, both as it aſcertains that often the ſac is of great extent, and the tranſit of the blood from the arteries to the veins through the cells very ſlow; that the tumor may be large, and truly an aneuriſm from anaſtomoſis, without being characterized by pulſation; and alſo as this little narrative may prove a warning to you, for the blood might have been difficult to reſtrain! and the wound difficult to heal!

The character and hiſtory of this kind of tumor, eſpecially when connected with the tortuous and inoſculating veins of the chin, neck, or thyroid gland, is ſufficiently explained by theſe examples; but there is ſomething in the general aſpect, and inevitable conſequences of theſe tumors when ſeated merely in the ſkin of the face, which I cannot allow myſelf to leave unnoticed.

The two ſketches which follow repreſent other forms of this diſeaſe, the firſt, No. 56, repreſents this diſeaſe in an aged countryman, where the tumor beginning in the face, and ſpreading over the cheek, had attained to the very unuſual height of two inches above the ſurface, without pulſation, but with frequent hemorrhage. The ſecond, No. 57, is an intereſting caſe of a young Gentleman of Birmingham, who, neglecting the diſeaſe in its early ſtage, and rejecting the aſſiſtance propoſed to him in the laſt ſtage of the diſorder, periſhed by hemorrhagy. On this caſe I

had the honour of being conſulted by Mr. Freer of Birmingham, who, with great liberality, and many kind expreſſions, permits me to make any uſe of the caſe. This is an inſtance of the diſeaſe truly lamentable, as the tumor grew from a very ſpeck, and at many periods of its growth might have been extirpated, with no other deformity than that of a ſcar, leſs conſpicuous (I am ſure it muſt have been) or diſguſting than the tumor: its fatal concluſion from ſo trivial an origin, may teach us to think and act with great deciſion in ſuch a caſe; ſince we alone, and not the friends nor patient, can foreſee the iſſue.

LETTER OF CONSULTATION FROM GEORGE FREER, ESQ. SURGEON.

" SIR,

" THE high opinion I have formed of your ſurgical knowledge, has induced me to requeſt your advice in a caſe of " Aneuriſm from Anaſtomoſis," which covers the whole of the noſe, except the very loweſt part. This diſeaſe, which has been nine years of arriving at its preſent ſtate, was at firſt a ſmall ſpeck, but now pulſates exceedingly. I ſhould never have heſitated to extirpate this tumor, but from its occupying ſo great an extent of ſurface as that repreſented in the drawing which accompanies the caſe. It extends from the angle of one eye to that of the other; and, from the tip of the noſe, it extends along the whole length of the noſe, and an inch higher upon the forehead; and the arteries which run into the ſubſtance of the tumor, being ſenſibly felt approaching the tumor on each cheek, will require an extenſive diſſection; and, in a part where no ſkin can be ſafely ſpared, the wound and ſcar muſt be very broad and wide. The caſe of Mr. R. as in page 464 of your work, ſo accurately expreſſes every other circumſtance in the character and ſymptoms of this diſeaſe, that I need uſe no other words to expreſs what I ſee and feel in this caſe. The Gentleman has been under my care but a few weeks, but the tumor bleeds from the ſurface on every ſlight exertion, and I am ſorry to add, my patient has frequent hemorrhages from the inſide of the noſe: whether there be any communication of the diſeaſe from the ſurface to the internal parts, I have no way of determining; but ſomething muſt be done, and I am acquainted with no other cure than that of complete extirpation. Although ſomewhat alarmed at the thoughts of ſuch an operation, I ſhall never ſhrink from my duty, and earneſtly requeſt your opinion upon the caſe: Will there be any danger from the branches of the ophthalmic artery, which muſt be

greatly enlarged? or do you apprehend much from the ramifications of the facial artery, inoſculating with thoſe on the inner ſurface of the noſe? We have reaſon in this diſeaſe to fear that the ſmalleſt ramification will have attained an alarming ſize: ſhould buſineſs or pleaſure carry you at any time ſo far from home as to viſit Birmingham, to ſhew you every poſſible attention will be a pleaſure to,

"Dear Sir, yours reſpectfully,

"Birmingham, May 23d, 1803. GEORGE FREER."

REPLY.

"I BEG you will believe me highly ſenſible of the honour you do me in requiring my advice in a caſe not without its difficulties, and not unconſcious of the value of the communication in every other ſenſe: this narrative, and the drawing which accompanies it, muſt give me particular pleaſure, not merely as a mark of your confidence and friendſhip, but as a profeſſional communication eſpecially acceptable to one, who has called the attention of the Public to this ſingular diſeaſe.

"Every thing inclines me to conſider the caſe deliberately, and to communicate, in return for your confidence, whatever I imagine conſolatory to your patient, and ſtill more whatever may be encouraging or uſeful to you, in that delicate operation which ſeems to me inevitable. I have no fear of immediate danger, nor the ſlighteſt ſcruple in aſſenting to your opinion, "that ſometing muſt be done," and in your hands I have no doubt it will be done ſkilfully, and, I truſt, ſafely. Give me leave, my dear Sir, to ſay to you in confidence and privacy, with my mind clear of the ſlighteſt taint of envy or malice, that I have ſeen much mangling among tumors, many operations undertaken with little forethought, and performed with proportionate ill ſucceſs; many precious leſſons of ſurgery have I learnt from ſuch ſcenes, but which are loſt to the Public, becauſe they are of a complexion that never can be diſcloſed: I am therefore ſincerely anxious to ſee the iſſue of ſuch a caſe treated ſkilfully, and I hope to write on the queſtions you propoſe ſo perſpicuouſly, that, however ſlight the benefit you may derive from my ſuggeſtions, you will be ſenſible, at leaſt, of my ſincere and friendly wiſhes for your ſucceſs, and will, in ſome ſenſe feel, as if we acted in concert, as if I were preſent with you in your intended operation.

"Firſt, I ſubſcribe to your affirmation "that ſomething muſt be done," becauſe we have every aſſurance that reaſon or experience can give, that tumors of

any kind rarely ſtop, or even relent in their growth, and tumors of this peculiar nature, never. That the increaſe of ſuch a tumor is not only unremitting, but is progreſſive in a geometrical ratio, its progreſs being accelerated towards its latter period in an incalculable degree, ſo as to hurry on the fatal period very rapidly; and we are ſenſible, that the circulation is in the ſkin over all parts of the body peculiarly active, and the circulation of the head more liable than that of any part, to occaſional excitement. This particular tumor is fed by innumerable ſmaller arteries, which act upon every occaſional excitement like thoſe of the cheeks in bluſhing, with unuſual energy: when once the pulſatory motion is manifeſt to the eye and finger, and the hemorrhages begun, it is a ſign that the caſe can no longer be neglected; the arteries, veins, and intermediate cells, are inceſſantly enlarging; the blood is accumulated, the ſolid matter attenuated, every ſlight impulſe occaſions a new hemorrhagy; if the tumor be in any inacceſſible part of the body we muſt pronounce it fatal, if in any part where we dare uſe the knife, we muſt do ſo without delay and without relenting.

"Secondly, Notwithſtanding the occaſional hemorrhages from the noſe, I believe the operation may be ſafely attempted: I hope it does not iſſue from the diſeaſed veſſels, becauſe, I believe, eſpecially in this caſe, that the aneuriſm is merely a cutaneous diſeaſe; this ſpecies of aneuriſm does, no doubt, affect the rectum, one remarkable caſe of which I have detailed; the rete-venoſum, which ſurrounds the proſtate gland, is often ſo affected; and I have attended ſeveral caſes, in which the varicoſe veins had burſt upon the internal ſurface of the bladder, filling it from hour to hour with blood, in place of urine, a diſeaſe which the patient ſeldom long ſurvives, being at once enfeebled by the hemorrhagy, and exhauſted with want of reſt, and by pain more poignant than that of the ſtone. Often this kind of aneuriſm affects the ſurfaces of the ſtomach and rectum, occaſioning in the former, thoſe vicarious hemorrhages which ſo often uſurp the place of menſtruation, and terminate fatally; and, in the latter, theſe hemorrhages which are aſcribed to internal piles, but which are ſo apt to terminate in ulceration and ſchirrus. There is no affection of the viſcera, eſpecially of the abdomen, more frequent than this, and none more fatal; but unleſs it be in a few caſes indiſtinctly narrated, as in that related by Mr. Balfour in the Edinburgh Medical Eſſays, I cannot remember any thing either in reading or in practice to perſuade me, that ſuch a diſeaſe can take place in the vaſcular texture of a bone, even in the medullary veſſels of the long bones. But in the flat bones, eſpecially in the ſmall flat bones of the noſe, I hold

this to be quite impoſſible, and thence conclude, either that the hemorrhages from the noſe are accidental, proceeding merely from a conſent, or ſynchronous impulſe in the arteries of the internal membrane, or that if theſe hemorrhages be a legitimate ſymptom of the diſeaſe, the naſal bones have been previouſly deſtroyed by caries, and the diſeaſe is gone ſo far, as that it will probably terminate ſoon in all the ſymptoms of cancer, ſo that no manner of operation can be of any avail.

" Thirdly, To one direct queſtion I muſt not forget to reply: I muſt declare, that I believe there is not the ſhadow of danger from the facial, ophthalmic, or any other arteries; there is no danger but of failing to take the diſeaſe clean away, nor any thing to fear but that the wound will not heal, but continue to bleed; I will venture to aſſure you, that neither the ophthalmic artery, where it emerges from the ſocket, nor the facial, where it turns round the ala naſi, are ſenſibly enlarged: if theſe arteries were much enlarged, they muſt now be felt ſo; but the ramifications, you will find, and not the branches, are enlarged; the arteries of the tumor are formidable rather from their number than their ſize, the throbbing, you will remark, is, in the moment even of its higheſt excitement, rather general throughout the tumor, than particular in any arterial branches leading to it: examine this circumſpectly, and I believe you will find that I am not wrong.

" Fourthly, I am loath to mention what I apprehend to be eſſential to the ſucceſs of the operation, what I think you muſt do in juſtice to yourſelf or your patient: but you are aware, no doubt, that, in extirpating this tumor, you have to diſſect away wholly and entirely the diſeaſed ſkin from eye to eye; from the cheeks to whatever extent the tumor is connected with the face; and from the point of the noſe, half way up the forehead, making all bare as if it had been torn off, (like the ſcalp from the ſcull,) by a fall, and that in doing ſo you muſt go down quite to the cartilage and bone, truſting that the cartilages and bones will be covered with fleſh from their own ſubſtance, firſt, in form of bloody ſpots, then of granulations, then of condenſed and continued vaſcular fleſh, hardening finally into a cicatrix, like that of a ſcald or burn. Such an extenſive cicatrix muſt be flat, puckered, ſhining, and unſightly, but nothing ſure can be more unſightly, than the tumor repreſented in your drawing. I think proceeding thus we may, with rational confidence, look for a perfect cure, but this we muſt do, or nothing.

" Fifthly, I am ſtill more unwilling to ſay, for it is diſcouraging, that I fear you will not entirely ſucceed at firſt, but will need gradually to extirpate the remains of

the diſeaſe: it ſeems to me that cut how you will, your ſucceſs will be but partial; "you will have ſcotched the ſnake, not killed it;" and as the great ſurface bared by your operations heals, you will obſerve certain points black with blood, and threatening to pulſate again; you will find them beginning to bleed, even while the wound is healing, and it muſt enter into your views to provide againſt this, not by any particular mode of operation, but by looking coolly on this partial return of the diſeaſe, clearing away theſe unſound parts by ſucceſſive partial operations, and occaſionally by cauſtic, in which you will be guided by your own diſcretion and judgment, and the good counſel of your friends and aſſiſtants.

"Sixthly, You will perceive that I do not ſo much apprehend danger in the moment of operation, as an imperfect cure; I have no doubt, that the patient will loſe more blood, though poſſibly in a leſs alarming way, by one ſpontaneous hemorrhagy, than by the moſt tardy operation, the purpoſe of which is indeed to ſave loſs of blood, by dividing the veſſels at a time when the patient is ſurrounded by good ſurgeons, and faithful attendants, not when by accident the general tumor, or ſome part of it, gives way, no one being preſent to give him neceſſary help. In the time of the operation the blood flows from individual arteries in their natural ſtate, far from the tumor; ſpontaneous hemorrhages, on the contrary, flow from the center of the tumor, or ſome of its larger cells, in fact, from all the tributary veſſels at once. There will, I am perſuaded, be no ſuch hemorrhagy as to endanger life, yet there will be much confuſion probably, and conſiderable loſs of blood. You muſt be accompanied with good aſſiſtants, and have agaric ſponges, and compreſſes prepared; the hemorrhagy will be from general ſurfaces, and minute ramifications, rather than from viſible branches which you can tie with the needle; and the wider you carry your circular inciſions beyond the verge of the tumor, the more will you leſſen the number of theſe branches. The bleeding then is to be prevented, not by taking up particular arteries, the ocular or facial branches, but by cutting wide of the pulſating parts of the tumor, and applying to the open ſurface ſlices of agaric, or dried ſponge, ſupported by compreſs and bandage. I ſhould imagine it a very vain attempt to look on the bleeding ſurface, in the time of operating, for individual arteries. Some degree of hemorrhagy there may be, even after a ſucceſsful operation; but were I, after extirpating ſuch a tumor, to find the flow of blood ſo violent and ſo general from all the ſurface, as to require the application of ſponges, I ſhould be apt to believe (however wiſely

planned, or wiſely executed the operation might be,) that I had failed of my purpoſe, and that the tumor would riſe and pulſate, and bleed again, even before the ſurface were healed.

" I hope, my dear Sir, for your ſake, and your patient's, that I have formed correct views of the nature of this tumor, and deſcribed whatever I imagine neceſſary or uſeful in the operation perſpicuouſly; I wiſh you all poſſible ſucceſs in this achievement, and to your patient all health and happineſs. Though it ſhould never be in my power to avail myſelf of your polite and kind intentions, I beg you will always believe me deſirous of being perſonally known to you, and remember me as one bound by this mode of communication in ſentiments of mutual eſteem and confidence, your friend and humble ſervant,

" 9, George-ſtreet, Edinburgh, JOHN BELL."
" June 25, 1803 *.

* This Gentleman declining every aſſiſtance, expired of hemorrhagy: and there is a ſpirit of liberality and politeneſs ſo pleaſing in Mr. Freer's manner of giving me permiſſion to make my own uſe of the caſe and drawing, that I cannot refuſe myſelf the pleaſure of tranſcribing his letter; it was in anſwer to a requeſt of mine, dated early in June, 1806.

" My dear Sir,

" I AM aſhamed to have ſo long delayed anſwering your polite letter, but hope you will feel no inconvenience from this omiſſion; I beg you may uſe the caſe in any way your judgment may direct; I aſſure you it will give me much pleaſure to read your further obſervations on this ſingular diſeaſe, and it was with regret I was prevented availing myſelf of your able opinion and counſel, in regard to the operation, the patient chooſing rather to die by repeated bleedings, than to ſubmit to the pains and dangers of it. Since the time of my conſulting you on this caſe, I have met with two caſes of a like nature ſeated in the lip; both of them I extirpated ſucceſsfully, and two years have elapſed without any return of the diſeaſe. I was indeed fortunate enough to inject one of the tumors with quickſilver, and have preſerved the tumor, which ſeems to conſiſt of a veſſel which I call an artery, conveying the blood to a ſac containing a variety of cells, and a veſſel at the oppoſite end, which I alſo call an artery, forming a ſubſtance correſponding in its general ſtructure with the annexed ſketch (No. 58.), which if it help to explain my conception of the diſeaſe, will alſo, I ſuſpect, intimate to you, that I am very little of a draftſman, but I ſhall be ſatisfied if my rude ſketch helps me out in my deſcription. The tumor was ſuddenly filled by every bodily exertion, or even by ſudden affections and paſſions; it pulſated ſtrongly, and did not ſpontaneouſly ſubſide, though it was eaſily repreſſed by the fingers; I mention theſe circumſtances merely as an additional teſtimony to the truth of your deſcription, and the propriety of your ſugeſtions in regard to the early extirpation of ſuch tumors. I cannot conclude without aſſuring you, it will give Mrs. Freer and myſelf much pleaſure to pay attention to you and Mrs. Bell, ſhould you think of viſiting us. Birmingham may boaſt of learned men, and ingenious mechanics, worth your knowing. We requeſt you will make our houſe your home while in Warwickſhire. With great reſpect, yours, &c.

" June 18th, 1806. GEORGE FREER."

You will obſerve, that I neither reckon the abſence of pulſation, the irrepreſſible nature of the tumor, nor the want of turgid veins, any perfect criterion of there being no effuſion of blood; and I am leaſt of all confident when the tumor occupies the vicinity of the thyroid gland. Often I find blood poured out in various parts of the body, either into ſacs, or into cavities, or into cellular ſubſtance, without being matured into pus: mere inflammation with ſome indiſpoſition or weakneſs in the ſtructure or actions of the part, occaſions this; and I am perſuaded, that often in old ſacs when the blood continues fluid for months, or even for years, it is poured out by a ſort of ſecretion, as the menſtrual blood is ſecreted from the ſurface of the womb, and is circulated by a ſlow re-abſorption which keeps it always fluid, though incloſed in a firm ſac, from which you cannot repreſs it into the veins which are yet capable of abſorbing it.

Among various examples of this general fact ſome are caſes of bloody effuſion, where we can only by provident evacuations, moderate that vaſcular action by which it is produced: others are caſes in which we can, by obliterating the ſac, into which the blood is ſecreted, ſtop this ſource of local diſeaſe: allow me then to illuſtrate thoſe two ſtates of extravaſation by caſes, which you will find have, both by being ſingular, and by being uſeful, a particular claim upon your attention.

By obſerving the various reſults of arterial action excited in an unnatural degree, and long continued, I have been able to prove to you, that arterial excitement in the arteries of the head, is often followed by effuſion of blood into the delicate ſubſtance of the brain, whoſe function, being proportionably affected, palſy enſues: the vaſcular excitement in any fleſhy part, by cauſing effuſion of a ſerous nature, into its cellular ſubſtance, produces the phænomena of inflammation, as pain, redneſs, ſwelling: that, when urged into a ſtate of intenſe action, the extreme veſſels give way, and the cellular ſubſtance, and the circulating veſſels, are choked with effuſion of real blood; then the inflammation aſſumes a deep red colour, and gangrene enſues: that when, in the courſe of a moderate and continued excitement, the veins correſponding with the active arteries are dilated, the cellular ſubſtance makes alſo a part of the diſeaſed ſtructure, and either the common cellular tiſſue, or the extremities of the veins, become ſacs, and receptacles of blood, through which the blood circulates continually, as through the body of the penis: but the effuſion of blood in conſequence of arterial excitement, into the cavity of a delicate organ, ſuch as the eye, or into a ſac formed from the cellular ſubſtance, and ſuch as more commonly contains a ſerous or purulent effuſion, I have as yet

only hinted at; I have mentioned that, during an epidemic ophthalmia, produced by the intenſe heats of ſummer, and often terminating in blindneſs, I could diſtinctly perceive the vaſcular action within the eye, to riſe by repeated exacerbations and diſtinct paroxyſms through all the degrees of diſeaſe, from that which is accompanied with heat, and pain and intolerance of light, to intenſe pain accompanied with ſlight delirium and beating of the temples, and at laſt to blindneſs, or utter deſtruction of the organ, that blindneſs being produced by a diſtinct and viſible effuſion of blood into the cavity of the eye. But the following narrative, in which you will find the ſame effuſion ariſing in conſequence of the moſt ordinary exciting cauſes, the blood effuſed, abſorbed, and effuſed again fifty times ſucceſſively, muſt be intereſting to you, if it were no more than as a ſingular effort of vaſcular action, and not an accident likely to occur again: it adds ſtrength to my former reaſonings, and bears many ſtriking analogies to other affections, illuſtrating in an eſpecial manner what I have termed the "Apoplectic impulſe."

"Mr. —— was conſided to my care, by his ſurgeon Mr. Grant, who accompanied his introduction with a neat and conciſe ſtatement of his malady *. Though he was not in a moment ſtruck blind of the left eye, yet in a few mihutes, after violent running, his eye was ſo ſuffuſed with blood, poured out into the chamber

* "Dear Sir, 14th December, 1806.

"PERMIT me to recommend to your particular notice Mr. ——, who labours under a very diſtreſſing affection of the eye. About three years ago, in the act of running violently, his ſight became obſcured; and, on examination, the anterior chamber of the eye ſeemed half filled with blood. Violent exerciſe, or any thing that occaſions an unuſual flow of blood towards the head, is apt to excite this diſeaſe. He may have a dozen attacks in the year, according to his mode of life. When the effuſed blood is re-abſorbed, a ſmall quantity of coagulated lymph remains at the bottom of the anterior chamber of the eye. This coagulum has of late increaſed ſo much, that the under-edge of the pupil is on the ſame line with it. When the attack commences, the anterior chamber of the eye is completely filled with the effuſed fluid, and viſion wholly obſtructed. During the continuance of the complaint there is much pain, and alſo an intolerance of light. A rupture of the arteries of the iris would ſeem to be the cauſe of the diſorder. The temporal arteries beat violently on the commencement of the hemorrhage. I am doubtful if a complete cure be within the reach of the art; but I am perſuaded he gives himſelf the beſt chance of this, by placing himſelf under your care. An operation may indeed remove the preſent coagulum, but will hardly prevent a renewal of the ſame proceſs. It is a caſe which I have not hitherto witneſſed; and ſhould therefore conſider it as highly obliging if you could find leiſure to acquaint me, on Mr. ——'s return, with your opinion of the cauſe, and mode of treatment. I remain, dear Sir, with much eſteem,

"Your's very truly,

"JA' GRANT,

"J. Bell, Eſq. Surgeon, Edinburgh. Surgeon."

of the aqueous humor, that the ſight was firſt obſcured, then extinguiſhed, and his friends, when at his requeſt they looked into the eye, could perceive the cauſe: that effuſion, which was at the firſt produced by this movement of accelerated circulation, returned innumerable times, in conſequence of various exciting cauſes, ſlight and violent, till at laſt it has become habitual and periodical.

" Mr. A——, though not yet twenty years of age, is more than ſix feet high; and three years ago, when firſt he was ſtruck with this ſingular kind of blindneſs, was growing ſo rapidly, that he actually believes he gained five inches in the year. He was then a ſtripling, and is now tall, ſlender, and delicate in his conſtitution, though remarkably well formed, and deſtined to become a ſtrong and muſcular man. Early in the month of September, 1803, on the day in which he was firſt attacked with this blindneſs, he had his hair cut early in the morning, he ate very heartily a hurried dinner, when, a companion having called while he was yet at table, and propoſed a party in a houſe at ſome diſtance, he went with him, and, being mere lads, and in a playful humor, his friend ran, and he purſued at full ſpeed, for the ſpace of three or four hundred yards: he inſtantly was ſenſible of his ſight being dim, in the left eye, he diſregarded at firſt a feeling which he imagined to be temporary, but, having arrived at the houſe, and ſat down, he was alarmed to find his viſion ſtill more obſcure, and, turning round to thoſe who were in company, he aſked whether they perceived any thing wrong in his eye; they ſaid there was blood upon it; upon looking into a mirror he ſaw the blood, found himſelf totally blind of the left eye, was aſſailed with dreadful pain: the bloody effuſion took place, the blood became viſible, and the viſion was entirely obſcured in the ſhort ſpace of fifteen minutes; then the violent pain began, a conſequence plainly, and not a cauſe of the blindneſs, and for ten days he continued entirely blind of that eye.

" His viſion was gradually reſtored, by the blood which had filled the whole of the anterior chamber of the eye, ſubſiding below the level of the pupil: the blood was ſtill viſible in the lower part of the eye, and continued ſo for three weeks; it gradually vaniſhed, and the eye recovered its wonted appearance, except that, in the very loweſt part, under the level of the pupil, there remained a little white matter, viz. the gluten of the effuſed blood. Such was the firſt attack of the diſorder, from which he continued free for the ſpace of ſix months.

" In the month of May, 1804, one evening while ſitting at ſupper, not conſcious of any previous excitement, from violent exerciſe or expoſure to heat, but

probably affected by the ſupper, wine, light, and heat, and animated converſation, he ſuddenly perceived the obſcurity coming over his viſion, the blood again appeared in the chamber of the eye, which was next morning affected with violent pain: yet this was in all reſpects a leſs ſevere paroxyſm than the firſt.

" Little more than a month had elapſed, when having, in the warm month of June, gone into the river to bathe, he was in the act of ſwimming, and juſt when coming out of the water, ſtruck with this obſcurity of viſion. The blood inſtantly came over his eye, which, on the enſuing day was affected with moſt excruciating pain, extending to the temple; but in three weeks or a month, his ſight was completely reſtored, and the eye had recovered its natural ſplendor and clearneſs. In the end of September, or beginning of October, he was again attacked, though he was conſcious of no exceſs, and was quiet, regular, and diſcreet in his way of living; he was ſeized while writing, and recollects no ſenſible cauſe to which the paroxyſm could be aſcribed, unleſs it were to the hanging of the head and ſtraining of the eye. The ſight was obſcured, the blood appeared again in the chamber of the eye, the pain returned, the blood was abſorbed again within the uſual period, and the ſight was in courſe reſtored.

" It was on the firſt of November, in walking acroſs the bridge at night betwixt ten and eleven o'clock, that he ſuſtained the fourth attack, but without ſuch total loſs of viſion, or ſo much effuſion of blood as heretofore, and certainly the blood was not ſo long of being abſorbed, nor was he ſo long obliged to cover the eye from the light: in eight or ten days he was able to uncover the eye, the appearance of ſuffuſion of blood was gone, but the lymphatic coagulum, occupying the anterior chamber of the eye was manifeſtly accumulating. On the 3d of February, 1805, he had a like paroxyſm, ariſing from very obvious cauſes; being a day of election of Member of Parliament for this city, his regiment was marched out of town to the diſtance of eighteen miles; and both in marching out to the temporary quarters allotted for his regiment, and in returning, he walked along with the men, was greatly heated by the exerciſe, and very naturally refers this attack to a cauſe ſo expreſsly reſembling that which firſt gave riſe to his malady, that it could not fail to attract his particular notice. " From this time," ſays Mr. A——, " theſe paroxyſms became periodical, and ſeemingly ſpontaneous; they returned once a month, the eye was kept in a ſtate of conſtant irritability and frequent pain, ſo that I was forced to have it conſtantly covered from the light; yet no circumſpection in this reſpect, nor in my habits of living ſeemed to avail me.

Of the few paroxyſms which I am able to particularize, as ariſing from any obvious excitement, one was on the morning after our review, in the month of Auguſt laſt, when, after being in the field, we ſat down to a dinner of ceremony and drank late; I muſt have exceeded, but am not conſcious of having been intemperate, I went to bed, perhaps a little heated with wine, I roſe early in the morning to go upon guard, and, in the act of dreſſing, and eſpecially in ſtooping to waſh my face, I was ſenſible on the inſtant of the effuſion of blood, and the return of the blindneſs." The ſecond memorable occaſion was ſtill more particular in the circumſtances, the excitement more marked than any, and explaining all of the others: Mr. A——, had gone abroad to a ſupper party of young people, where a moſt unuſual degree of hilarity prevailed, ſome very ludicrous ſongs were ſung, and he joined the general mirth, and laughed immoderately, and ſo long that in the end he ſaw the candles dim, and, in a moment, found his eye quite ſuffuſed with blood.

" This Gentleman's diſeaſe has now taken a moſt decided form; it returns ſometimes once a fortnight, ſometimes once a month, ſeldom do two months elapſe without a new effuſion of blood; and it returns with a degree of regularity almoſt periodical. The ſenſibility of the eye is ſuch, that he is obliged to keep it always ſhaded; and each new effuſion of blood is now followed by a paroxyſm of pulſatory pain in the temple of that ſide with an intolerable throbbing, ſomething betwixt general head-ache, and pain of the affected organ, a pain which is in ſome degree relieved by ſteady and continued preſſure. Sometimes, as you will learn from the narrative, the excitement is ſenſible, and the cauſe of it ſuch as in ſtrict prudence he ſhould have avoided, but is often too ſlight to be obſerved; now the effuſion returns always, or almoſt always, without an expreſs or ſenſible cauſe, from a prediſpoſition ſo ſtrong, that he is come to a conviction, that laughing, crying, ſinging, running, ſwimming, ſtooping, exceſs in wine, or any of thoſe cauſes which have at former times plainly produced this effuſion, would cauſe it inſtantly to return.

" It muſt ſeem very ſurpriſing, that an organ ſo delicate as the eye ſhould be able thus to ſuſtain repeated effuſions of blood, without having its ſtructure entirely ruined; but the reſiſtance of its ſtrong coats, filled and tenſe with its own humors, plainly has its effect in limiting the bloody effuſion, yet the additional tenſion is ſuch, as occaſions that violent pain which is excruciating even on the firſt, and at its achme, the ſecond day after the effuſion has taken place. That the extravaſa-

tion is of pure blood, which keeps its properties unaffected by the dilution with the aqueous humor, is both ſenſible to ſight, and proved by the ſolid white coagulum, which each ſucceſſive effuſion leaves behind. The ſketch, No. 58, expreſſes the preſent ſtate of the eye; its form is in no degree changed; if there were the ſlighteſt reaſon to apprehend any alteration of bulk or form, it is from the eye-lid being drawn down, and that ſomewhat obliquely over the eye, ſo as to cover much of the cornea, or coloured part, and expoſing chiefly the inner ſide and lower part of the eye, where the coagulum lies. The blood of its proper purple colour obſcures the whole; the pupil is not to be ſeen, the coagulum which, in conſequence of its bulk, is very thinly covered with the blood, is almoſt white, and occupies all the lower part of the anterior chamber of the aqueous humor, occupies the ſpace betwixt the lower half of the iris and the cornea, covers ſome part of the pupil, and has, I fear, irremediably injured the viſion, which yet is not extinct: but ſtrict regimen, profuſe evacuations, a ſeton in the nape of the neck, and opiates to appeaſe the ſenſibility of the eye; an abſtemious, quiet, and regulated courſe of life, will, I hope, prevent future effuſions; and when his growth is aſcertained, and theſe paroxyſms of local arterial action are abated, I hope that much of this coagulum will be abſorbed.

Even the dilatation and contraction of the iris itſelf has been aſcribed, by the celebrated Haller, to an influx of blood, from a ſudden excitement of the arteries of the part, ſimilar to the bluſhing of the cheek, or erection of the penis: but here we have evidence of a periodical accelerated action of the arteries of a part, gradually widening its circle of excitement, till, from the arteries of the iris, or ciliary proceſſes, the arteries, not only of the whole eye, but of the temple and ſide of the head, partake of the excitement; a circumſtance, which the ſympathy of nerves, and their influence over the arteries, ſufficiently explains.

But I always reckon a caſe more uſeful in proportion as it approaches the more ordinary occurrences of practice, and ſacculated tumors on the throat containing blood are ſo frequent, and require ſuch careful treatment, that I will occupy a ſmall portion of your time in laying an example before you.

Miſs A——. came from a diſtant part of the country, with a tumor encircling the whole throat, from ear to ear almoſt, and extending from the chin to the ſternum. This tumor, the growth of ſeveral years, could not be a ſuppuration of the thyroid gland, for there had been from the firſt no induration nor inflammation, but a ſac containing a ſecreted fluid, increaſing ſlowly in quantity, till the tumor

covered all the trachea. This, like every other great ſac, was far from being tenſe, it could be pinched up with the finger and thumb, ſo as to make the uncommon thickneſs of the ſac very ſenſible to the feeling, and the fluid ſo diſtinctly fluctuated, and ſo eaſily from ſide to ſide of the tumor, as to convey the impreſſion of its being like that of Peggy Hall, of a thin and ſerous nature; nor was there any other reaſon, except the peculiar ſeat of the tumor, to doubt of its being ſerum, or to apprehend that a tumor ſo old, and forming ſo ſlowly, could contain blood.

In the choice of means for obliterating ſo large a ſac, occupying in a young lady the whole circle of the throat, it is moſt natural to incline to thoſe methods, which, if ſucceſsful, are leaſt liable to produce either a ſcar, or unſightly thickening, or any other deformity: but, in the preſent caſe, I could not but prefer the moſt deciſive method of proceeding, to thoſe which ſeemed milder, for the following reaſons. The flaccid ſtate of the tumor was ſuch as permitted me eaſily to pinch up the ſac, and feel moſt ſenſibly that its walls were peculiarly thick and fleſhy: I foreſaw that if ſuch means only were reſorted to as tend to obliterate the ſac ſlowly, and by ſucceſſive paroxyſms of inflammation, the muſcular faſcia of the neck, the platyſma-myoides, would be united by adheſion to this thick and fleſhy ſac: I feared that if the walls thus conſtituted were kept long in an inflamed ſtate, irritated, and thickening, the thyroid gland would not entirely eſcape, but become inflamed and hard, ſo as to form a ſolid baſis for the tumor; and I could not but recollect how much more apt the thyroid gland is to ſwell in the female ſex: for theſe and various reaſons, eſpecially from my patient's intention of returning home, I propoſed that method which, though it may be blamed as the moſt cruel, is often in truth the moſt lenient, by being the moſt effectual; I mean the paſſing a ſeton or ſyndon acroſs the ſac: but, from that timidity which carries with it ſuch ſtrong apologies, the method I propoſed was unfortunately declined, and that of a ſimple puncture preferred.

Having called Dr. Monro into conſultation, the propriety of opening the ſac was decided on, from theſe motives; firſt, the certainty of the ſac continually increaſing in ſize, deforming the neck more and more, and, perhaps in the end, corrupting the cartilages of the larynx, and making its way into the trachea, and forming there ſuch irregular ſuppurations, and incurable fiſtulas, as often prove fatal. Secondly, that there is no kind of motive for refraining from this very neceſſary act of duty, ſince the fluctuation is diſtinct, the ſac circumſcribed, the fluid not repreſſible; no varicoſe veins occupying its ſurface, no pulſation felt from

within its ſubſtance, to make us fear its being ſupplied by any remarkable arteries.

It appeared to us that, if there was blood in the tumor, or hemorrhagy in the operation, it could be only ſuch as might diſtil gradually from the ſurface of ſo firm a ſac, not ſuch active hemorrhagy as might endanger life, or prevent the ſuppuration of the cavity *.

Upon making an inciſion through the ſkin and faſcia of the lower part of the neck, and ſtriking the lancet direct into the tumor, a thin bloody ſerum ran out, or rather pure blood, for it coagulated in the ſaucers, even before it could be turned from them into the baſon: it expreſsly reſembled that thin bloody ſecretion, which I have ſo often ſeen run out upon making openings round the knee-joint, or in ſwellings when, in conſequence of a ſhock or rude blow, blood of this dilute and ſerous nature is effuſed, as from the ſhock of riding againſt the pole of a carriage, &c. or in conſequence of high and ſudden inflammation; even after ſtrains of the muſcles without any external injury, I have ſeen ſuch effuſions of blood, and ſhall have occaſion to relate ſome fatal caſes of this nature.

In the evening when the plug was withdrawn, the ſame thin bloody ſerum, inſtantaneouſly coagulating, flowed from the ſac; and at each dreſſing, during the firſt four days, the fluid which was diſcharged ſeemed little different from pure blood; it was plainly a ſort of ſecretion from the thick walls of the tumor, it gradually became leſs coagulable, then very thin and whitiſh, and ripened before the tenth day into pure and well conditioned pus, importing, that the internal ſurface of the ſac was in a ſtate of ſuppuration, and inclined to heal.

Now the time of my patient's departure approached, and the ſeton or long ſkain of cotton by which the ſac was to be kept inflamed till obliterated, and the ſponge with which the opening was to be preſerved, had been long uſed, and thoſe who were in future to manage them made familiar with their uſe. The former was lodged deep, and within the ſac by the long probe; and the latter had been gradually enlarged ſo as rather to dilate the opening in proportion as the cavity of the ſac leſſened; the Gentleman who was to be intruſted with this part of the proceſs was a party at each dreſſing, and I had no fear that all would go well: but my firſt letter from the country announced that the matter was foul, bloody, and fœtid; the flow of it obſtructed by fungus, almoſt cloſing the orifice; that the in-

* The opinion and deſcriptions are extracted from my caſe-book; the other circumſtances of the caſe are not from recollection, which I never truſt to, but from letters and memorandums.

troduction of the ſponge was become difficult, or almoſt impoſſible; and that advice was expected of me, which really could be of no avail without either my perſonal preſence, or my patient returning to town. I was ſenſible that now the means I recommended muſt be reſorted to, for, (although it was not included in the deſcription of all that was wrong,) I was ſenſible that there muſt be a great thickening of the neck and throat, from the induration of the ſac: I found that much preſſure and thumbing of the parts was neceſſary to diſcharge the matter, and that ſhe had ſuffered from attacks of fever, accompanied with pain and ſwelling of the tumor.

By good fortune I was called into that part of the country, and found when I viſited this lady, the whole tumor condenſed into a thick ſpongy maſs, inflamed over the whole ſurface, and ſpongy in its ſubſtance, in conſequence of continual torturing and ſqueezing, while pieces of the ſponge tent were ſuſpected to lie buried in it: I actually encountered theſe loſt pieces of ſponge with the probe, and hooked them out; enlarged the lower opening, paſſed the long iron probe obliquely acroſs the throat to the upper part of the tumor, and examined how I might beſt cut it out: but this I found a more difficult and delicate operation than I had imagined, for the upper part of the ſac lay under the left lobe of the thyroid gland, entirely under it, ſo that a conſiderable thickneſs of parts was interpoſed betwixt the probe and the ſkin, and it ſeemed impoſſible to cut out the probe without wounding the thyroid gland and ſome of its arteries. The beſt I could hope was by circumſpection not to cut a large one, I therefore felt long and circumſpectly round the point of the probe, made an inciſion through the ſkin only, ſuch as admitted the point of my finger, and with that feeling the maſs of the thyroid gland, and being ſenſible that no large artery was under my finger, I diſſected through it. The bleeding was ſo violent and alarming that my aſſiſtant, a medical Gentleman inured for 40 years to all variety of practice, fainted, and forſook me. I could not go on to open the ſac, for that would have left me without any ſurface to preſs againſt, or cut upon, if I ſhould need to open the ſkin more widely, and take up an artery; and had I opened the ſac, the blood would have been admitted to its cavity: laying therefore a piece of ſponge into the inciſion, and preſſing it down with the thumb, I allowed ſome time to elapſe, and the hemorrhagy ceaſed, ſo that I was enabled, in half an hour, to proceed and cut out the probe: having paſſed it I drew a coarſe big ſeton acroſs the ſac, and left it there with careful inſtructions how to uſe it, viz. by carefully ſhifting and replacing the cord; by applying poultices outwardly, and ſlightly aſtringent injections inwardly, according to the ſtate of the

parts; thus from a miſtaken lenity the cruelty was ſtill to do, and the thickening and deformity fixed and irremediable.

Recollect then in your future practice, that a tumor hard at firſt, and gradually ſoftening into fluctuation, muſt contain matter more or leſs mature; but that a tumor ſoft, even when very ſmall, gradually enlarging, and having no ſtool, or baſis, may contain blood: that a tumor of this laſt deſcription, ſeated on the fore-part of the neck, often does contain blood, though it is neither varicoſe, nor pulſating: beware then to make no raſh opening without making this prognoſtic, that the tumor may contain blood not matter.

Believe me, Gentlemen, I am incapable of magnifying by the manner of my narrative any ſuch trivial difficulties, as this of the thyroid gland and its ſyſtem of veſſels, being interpoſed betwixt the knife and the probe; I mention theſe occurrences as leſſons concerning little points of practice, which, without experience, you could never learn, and which indeed without careful notes of the trivial perplexities of the hour of viſit, I ſhould not have remembered to teach you.

But to return to ſubjects ſtill more intereſting: you will have obſerved that I ſpeak of eroſion and caries of the cartilages of the larynx, as producing very diſmal conſequences, and as far from being unfrequent, and that I allude to the poſſibility of blood or matter penetrating through the walls of a ſuppurating or ſacculated tumor into the throat: theſe are accidents productive of ſuch ſingular and fatal effects, that I chooſe rather to repreſent the mechaniſm of the diſeaſe by plans and drawings, than the particular ſymptoms of any individual caſe. You are aware of the complicated maladies, which ariſe from the burſting of abſceſſes into the internal parts, from the rectum or pelvis into the urinary bladder, from the perineum into the urethra, from the belly into the ſtomach, or from the neck into the throat; and, from the complicated functions of the throat, in breathing, ſwallowing, and ſpeaking, abſceſs of the neck affecting thoſe paſſages, produces a ſtrange variety of ſuffering. I have remarked in practice ſeveral ſtages of danger and ſuffering, which I think it deſirable you ſhould be acquainted with: firſt, the ſuppuration which I am now going to deſcribe, ſeems to me of a ſcrophulous nature; it begins without any ſenſible inflammation, it ripens inſenſibly, and extends, and diſplaces the trachea, and œſophagus, without pain or any other diſorder, except difficulty of deglutition; it grows ſo very ſlowly, that the patient is no way alarmed, and the ſurgeon is not at firſt conſcious of all the dangers of his ſituation. When firſt the ſurgeon's attention is called to the tumor, it has very generally attained to a great

ſize, at once compreſſing the throat, and bulging out the neck: a diffuſed tumor is obſerved towards the lower part of the neck, below the place of the larynx, approaching nearer to the clavicle than the throat, occupying the interſtices of the muſcles, and capable, like a hernia, of being repreſſed behind the maſtoid: the fluctuation of the matter is obſcure, when the ſurgeon feels for it in the neck only; but when he looks into the throat, he diſtinctly perceives a ſoft, uniform tumor, preſſing the tonſil and root of the tongue towards the oppoſite ſide, intruding upon the throat, obſtructing the breathing much, but ſtill more the deglutition: he is ſenſible that this is the upper part of that ſac, which protrudes in the neck below; by puſhing his fingers into that ſide of the throat, he feels the ſoftneſs and fluctuation of the matter contained within a large and flaccid ſac; and by tapping below, and feeling or looking at the ſame time into the throat, he is ſenſible that it is one great abſceſs occupying all the neck, lying deep under the muſcles, in the direction of the œſophagus, and what is more dangerous ſtill, of the trachea; and, if he is as conſcious as he ſhould be of this danger, and as clear as theſe ſigns ſhould make him of the extent and place of the abſceſs, he with his ſcalpel cuts through the ſkin in the lower part of the neck, diſſects till he feels diſtinctly the ſac and the fluctuation, and then plunging his knife or lancet into it, prevents the ſad conſequences of its burſting into the throat, by this timely opening in a dependent point; by the preſſure of the muſcles, which, every time they turn the neck, or move the throat, preſs the ſides of the ſac in contact, it is obliterated though ſlowly, and the judicious uſe of injections and of ſyndons contributes greatly to the cure. I have more than once ſeen the throat ſurrounded on every ſide with theſe baggy abſceſſes, occupying the ſpace under the angle of the jaw, and the two ſides of the neck irregularly, ſo as to require inciſions which it yet is always unpleaſant to make: nor ſhould the ſurgeon ever allow himſelf to make ſuch inciſions without that declaration, which may be ſo neceſſary to his own good repute, viz. that it is not impoſſible the tumor may already have communication with the trachea, or that air may iſſue along with the matter; for often the abceſs burſts into the throat with an opening ſo ſmall, and of ſo valvular a form, that the abſceſs imperfectly diſcharged of its contents, maintains its original form and ſize, while the ſlow iſſue of the matter from it only excites a ſlight and occaſional cough.

Secondly.—I have ſaid the patient feels no pain, and the ſurgeon is unconſcious of danger, when an abſceſs thus occupying the neck threatens to burſt into the throat: the danger indeed is of a nature, which practice only, and not theory could enable

you to predict. While the diſorder has not reached the throat, its effects cannot be imagined, ſo entirely is the ſimple abſceſs free from harm, or the appearance of harm, the diſplacement of the trachea, the uneaſy bulkineſs of the throat, and the difficulty of breathing and ſwallowing excepted: nor is it upon its firſt burſting into the pharynx that the ill effects of it are perceived; I remember one coarſe country-fellow, in whom two large ſcrophulous abſceſſes of this complexion had burſt into the pharynx, but except a hoarſe uncouth voice, and difficulty of ſwallowing, he had as yet no ſymptom which was not rather ludicrous than dangerous; for you diſtinguiſhed the connection of theſe abſceſſes with the throat, not by ſeeing any openings internally, or knowing by any mark that matter was diſcharged into the throat; but by the fellow blowing up the two bags at will, till they reſembled the alforges of a baboon, and really when this reſemblance ſtruck you, you could hardly, on looking at his ill ſhaved, grinning muzzle, think them at all miſplaced. By making free openings on each ſide, and waſhing and cleaning the ſacs, they were conſolidated.

But when ſuch abſceſs lies deep behind the throat, betwixt the vertebræ and the pharynx; when it is not ſenſible, nor can be opened outwardly, and ulcerates and burſts within, a ſac is formed accompanied with a ruinous diſorder of the ſtructure and function of the part. Even before the abſceſs burſts into the throat, the larynx, or cartilaginous and only ſolid part of the throat, is preſſed ſtrongly over to the c poſite ſide; the arches of the palate betwixt which (i. e. betwixt the anterior and poſterior arch) the tonſil of each ſide is lodged, are ſo preſſed together as to adhere; the ſecreting ſurface of the tonſil is thus ſealed up, and covered over by the adheſion, as if it had never been, and the membrane of the throat becomes flat and ſhining, its natural plies are obliterated, and the whole is ſmoothed into one level ſurface, till new conſtrictions and diſeaſed folds and ridges are formed.

Thus, by the very firſt adheſions, the throat is ſtraitened; often the arches of the palate are ſo fixed down by adheſions, that the whole opening from the throat towards the noſtrils is cloſed up, as in the boy whoſe caſe I formerly mentioned, or is almoſt cloſed, leaving a ſmall ſlit-like opening, like the ſlit in a poors'-box, as in the diſeaſe repreſented in the drawing, No. 59*. Now there is a perpetual regurgitation of the food and drink, ſuffocation, ſo that the eyes ſtare in the head, accompanying every attempt to ſwallow: the air is admitted into the abſceſs, and

* The drawing which is placed laſt in the volume.

the matter into the trachea: the tickling cough is inceſſant, the expectoration endleſs, the fits of real aſthma very frequent. The admiſſion of the air and food into the abſceſs mixing with the pus, gives a peſtilent fœtor to the breath; and thoſe functions of ſpeaking, breathing, ſwallowing, which go on in the natural ſtate of the parts without conſciouſneſs, or any ſenſible efforts, are now a perpetual ſtruggle, and if the patient can at all ſurvive, it is by being careful to ſwallow little drops of fluid, and little morſels of nouriſhment, with that caution which is abſolutely neceſſary to prevent ſuffocation, which yet often fails, and then ſevere ſtruggles and ſuffocation come on.

During the progreſs of the diſeaſe, the thin matter of the abſceſs is ſtreaming into the trachea, while the coughing and ſtraining ſupports a perpetual ſtate of ulceration: the whole inſide membrane of the throat is thickened; that glandular ſurface ſurrounding the root of the epiglottis, and named, from its natural aſpect, caro glanduloſa, is thickened and exulcerated; the mouth of the glottis has its lips ſo thickened, that it is no longer flexible nor patent; and the back of the pharynx, if it be not hidden by the adheſion of the arches of the palate, is ulcerated, grows fibrous and ſtringy, like the chordæ tendineæ of the heart; the muſcular ſtrings which croſs it in every direction are red, and ulcerated; and the reticulated interſtices, filled with pus, which you ſee ſometimes oozing out from larger ulcerations and cavities. Theſe are changes of ſtructure, which occaſion a very protracted ſcene of ſuffering; the patient walks with his chin reſting on his breaſt to relax the ulcerated throat; his uſual breathing is ſlow and difficult, accompanied with a lifting of the cheſt and ſhoulders, a raiſing of the eyelids, an anxious contraction of the features, and a hiſſing and ſtridulous noiſe; he is perpetually clearing, or attempting to clear the thickened and encumbered trachea coated with mucus, and this action is ſo inceſſant, that it ſeems neceſſary to his breathing at all. The voice is whiſpering, and when forced degenerates into a ſort of ſcreech: the arches of the palate, while they contract and cloſe over the tonſils, adhere alſo to the Euſtachian tubes, ſo that the hearing is almoſt loſt, whence the patient, in converſing with you, always turns his head and lays his ear to hear you. His breathing is habitually difficult, ſo that the blood is driven into the head, and he paſſes much of the day and all the night in a lethargic ſtupor, each fit of anxious breathing being followed by oppreſſive head-ach, and increaſing ſtupor. He riſes during the night in aſthmatic paroxyſms, and expoſing himſelf to an open window, finds a ſlight relief, and, returning again to bed, falls into an apoplectic ſtupor, from which, even at mid-

day, he is roufed with difficulty. At laft, becoming truly apoplectic, he, in fome unufual paroxyfm of afthma, runs to the window, throws open his neck and breaft, grafps at fomething for fupport, and, no longer able to fuftain the ftruggle, he falls into a fit of ftupor, his head drops forward, his limbs relax, and he falls down and is found dead. This is the dreadful conclufion of the fcene where the flow thickening of the internal membrane of the throat, and efpecially the induration of the glottis, is the caufe of his death.

Thirdly.—I know not whether this labouring and dreadful condition, much as I have fympathized with thofe who have died fo, is the worft, for often the diforder is more complicated by big and capacious facs of matter burfting into the throat; and the death of the patient, though lefs lingering, is more terrible. When a great abfcefs is permitted to undermine all the cellular fubftance of the throat, and furround the œfophagus, there are no limits to the number of openings: it burfts at various points into both œfophagus and larynx: the openings into the tube are as various and perplexing as thofe around a difeafed urethra, and it is as difficult to find the true paffage, fo as to convey nourifhment to the patient. The openings are large, oblique, and valve-like, and often furrounded with ftrings of indurated fibres, refembling the openings in the auricles of the heart: thefe mouths of the abfcefs are as large and open, to receive whatever of fluid or folid the patient tries to fwallow; the food and drink pafs fometimes into the trachea, fometimes into the facs, fometimes it regurgitates with great violence by the noftrils, going, in fhort, in every direction but down the natural paffage, which being fleſhy collapfes, while the flits in the folid larynx, or cartilaginous part of the throat, prefent themfelves to receive the morfel, or a part of it; and the bag, when diftended by food, or drink, or air thus preffed into it by the action of the throat, compreffes the œfophagus. Where there is lefs of general ulceration and thickening of the membrane, and the fac compreffing the œfophagus is large, the patient is rather ftarved than fuffocated; he retains all his faculties, makes every effort to receive food, he falls into fits of fuffocation only when he tries to drink, and actually dies of famine. His condition gives a greedy eager expreffion to his features, and a wild and hurried manner in all his actions; he wifhes for food, yet knows he cannot fwallow; he has an irreſiſtible defire for drink, but, when he endeavours to pour it down, it is rejected by his noftrils: the ftruggle for breath continues long after each attempt to fwallow, and fhrinks up his features into a rigid grinning form; his fhoulders are raifed, his lean and fkinny hands fprawling and extended, his vifage is pale

and meagre, his noſtrils dilated, his forehead wrinkled, high, his eye-balls ſtaring from their hollow ſockets, the angles of his mouth retracted, and the viſcid ſaliva, which he has not power to ſwallow, diſtils in ſtrings from his mouth. Such is the dreadful condition to which a patient is reduced by that ignorance and indifference to ſlighter ſigns of diſorder, which is ſo common with the vulgar, or by the ſurgeon allowing for fear of danger, any deep-ſeated abſceſs to burſt thus into the throat.

Even after the tumor has burſt into the throat, it is not too late to cure the abſceſs; it ſeems to me that a dependent opening will, by emptying the ſac, prevent thoſe diſorders which only long continued ulceration and complicated openings occaſion.

" James Ogilvy, a man of middle age, has a deep ſcrophulous abſceſs occupying the right ſide of the neck, diſplacing the trachea, and pointing in the throat: how long it may have exiſted he does not know, but ſix months ago it became very prominent, eſpecially towards the lower part of the neck, affecting his breathing and ſwallowing, yet that very ſlightly, and accompanied with no ſenſe of uneaſineſs nor pain: but ſoon after, however, the tumor appeared in the lower part of the neck, it became painful, and, about four months ago, the ſwelling began to be felt in the mouth; this ſtage of the diſtenſion was accompanied with violent pain. Since then the ſwelling has increaſed continually, though ſlowly; the ſwelling in the lower part of the neck is diffuſed, ſoft, and colourleſs; within the throat, in the fauces, it appears large, ſoft, fluctuating, equably convex, and apparently filling the whole of the pharynx; the pain is gone, but the reſpiration is affected, deglutition extremely difficult, and the abſceſs is ſo tumid, that you would expect it to burſt immediately, and widely, into the pharynx; indeed, although the abſceſs thus preſerves its convexity, I cannot but be perſuaded, that there is already a partial opening betwixt the horns of the os hyoides, and thoſe of the thyroid cartilage, at a point where we cannot ſee the ulcer. I am perſuaded of this from the inceſſant cough and perpetual diſcharge of matter: he has a hectic viſage, and a fretful pulſe, and the circumſtances of the abſceſs admit of no delay.

" On the 25th of July this great abſceſs was opened by an inciſion in the lower part of the neck, and nearly three pounds of thick yellow pus were diſcharged. The neck flattened, the reſpiration and deglutition became eaſy, and the internal ſwelling, viz. that which appeared within the throat diſappeared; the abſceſs was carefully waſhed out with injections, and every care taken to keep the



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Engraved by T. Mitchell.

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cavity of this enormous ſac clean, and to ſupport the patient's ſtrength and prevent fever.

" But it rarely happens that ſo great an abſceſs is opened without hectic: the diſcharge was very profuſe and thin, his pulſe roſe from 80 to 112, he complained of great weakneſs and had night ſweats, while his ſkin was burning hot, and his tongue white: the fever continued with little abatement for ten days, for eight days more it continued increaſing, ſo that his life ſeemed endangered, but as yet we were not conſcious of any other cauſe than the great extent of this abſceſs and the profuſe ſecretion of pus, when ſuddenly the abſceſs within the throat, which ſeemed to be emptied through the inciſion below, but had only ſubſided, burſt into the pharynx; then his anodynes procured him reſt, the bark ſat pleaſantly on his ſtomach, his food nouriſhed him, his appetite and ſtrength increaſed every day, the diſcharge which now became very moderate, ſometimes almoſt ceaſed at the external opening, and then totally ceaſed from the abſceſs of the throat: at laſt, at the end of ſix weeks, he was permitted to retire to the country to live on milk and take gentle exerciſe, with every proſpect of a perfect cure."

But this is a piece of pathology which deſerves to be deſcribed with all poſſible care, and in every form; I will therefore explain it to you by drawings, accompanied by a ſlight narration of what the patient ſuffers, in the laſt and fatal ſtage of this diſorder. That the condition of the poor creature whoſe caſe I am now to relate was miſerable to the laſt degree will readily be conceived, by remarking the diſordered condition of the pharynx, as repreſented in this drawing, which I firſt of all deſcribe, becauſe it will connect the phænomena of the diſeaſe with the diſorders of the organ. In this diſſection of the throat, No. 59, (a a) repreſents the tongue divided about one third from its edge, ſo as to throw the tongue, larynx, and epiglottis over to the left ſide, and diſplay the diſeaſed pharynx down to the opening of the trachea: (b b) is the ſmall ſegment of the right ſide of the tongue, ſuſpended by a thread twiſted round one of the grinders: (c) is the opening of the ear, (d) is the maſtoid proceſs, and (e) the ſtyloid proceſs, and (1) indicates the ſtylo-gloſſus muſcle, (2) the ſtylo-hyoideus muſcle, the ſtylo-pharyngeus lies behind theſe, (33) marks the two bellies of the digaſtricus maxillæ inferioris. All the walls of the pharynx are in a diſeaſed and conſtricted ſtate: (f f) marks that cord or ſtraitneſs, which, though now on the level of all the reſt of the ſurface, was once the limits dividing the mouth and noſtrils; it was the anterior arch or line of the palate, from which the uvula hangs: (g) though now a diminutive caruncle,

was once the uvula, hanging from the point of the velum pendulum; (h) is now the only opening left betwixt the noſtrils and the mouth, or top of the pharynx; it is ſlit-like, and no bigger than to permit a farthing to paſs into it edge-ways, the arches of the palate, and the velum palati, or ſoft and moveable palate, have both adhered ſo to the back of the pharynx as to ſeal down the tonſils, and the face of both tonſils is ſo covered by this adheſion, that even the place where the tonſils ſhould be is not to be perceived; and the adheſion of the arches of the palate is ſo complete, as to leave only this ſlit-like opening. Now to demonſtrate the diſorder of the œſophagus, obſerve the relation of parts: (i) marks the cut ſurface of the thyroid cartilage, or great cartilage of the larynx, which muſt be divided, and the ring of it ſpread out, before the glottis or epiglottis can be ſeen; (k) is the oppoſite cut ſurface, of the ſame ſcuti-form, or ſhield-like cartilage; (l) is the opening of the glottis, not very diſtinctly ſeen, for all parts cannot in one view be diſtinctly ſeen; but its lining is exceedingly thickened, and purſed together; (m) is the epiglottis, riſing like a little tongue, or valve, over the glottis, and connected with the root of the tongue, ſo as to move along with it, and conſequently to flap down upon the glottis, when the back of the tongue is curled up to throw the morſel into the pharynx: (n) is the edge of the epiglottis thickened by inflammation, and thence curling inwards; (o) is the trachea truncated a little below the cartilages of the larynx, and (p) is the œſophagus, or tube conveying the food into the ſtomach, lying behind the trachea, in a hollow or concavity formed for it in the back part of that tube. Behind the angle (q), where the thyroid cartilage is cleft in two, is ſeen the diſeaſed walls of the œſophagus, where white and ſhining cords, tendinous and hard, mark the place and manner in which the parts are conſtricted by long continued ulceration; and through various long and valve-like ſlits are introduced, bougies, which paſs down into the ſac of an abſceſs, which lay chiefly on the right ſide behind the œſophagus, and by the ſide of the larynx; this abſceſs had penetrated into the larynx, as well as into the œſophagus, but for the reſiſtance of the great cartilages; and even theſe are eroded, and to ſpeak truly, carious throughout, giving way at many points, but into the pharynx it has penetrated by many ſucceſſive ulcerations. Firſt, the bougie (r) is paſſed through a a valve-like opening half an inch long, ſurrounded juſt as the foramen ovale, and other openings in the auricles of the heart are, by tendinous and indurated cords; and this bougie is paſſed through the great bag of the abſceſs, and out again through an opening near its lower end at (s); (t) is a ſecond bougie paſſed through

a ſimilar opening, guarded in like manner by tendinous ſtrings, and cord-like indurations; this opening is nearer the ſide of the tongue, and the bougie is paſſed in like manner through the cavity of the abſceſs, and its bigger end appears at (u) through a ſlit or opening in the lower part of the abſceſs. (v, x, y) are other ſmaller and valve-like ſlits, originally, I doubt not, they have been openings from individual and ſmaller abſceſſes; but now all the openings, five in number, permit the bougie to paſs into the great cavity or ſac behind the œſophagus.

This drawing diſplays ſuch devaſtation among parts, the moſt eſſential to life, and of this diſorder but a little part was viſible; for only the hole or ſlit (h), the remains of the opening of the palate was viſible during life; the ulcerated openings from the abſceſs into the pharynx, lay oppoſite to the glottis, and ſo far below the root of the tongue, as not to be ſeen or even ſuſpected in any other way, than by the catheter (when we attempted to paſs it into the œſophagus) ſlipping into theſe ſlit-like openings: the mechaniſm of the throat was entirely ruined, and the larynx, irritable even in its healthy ſtate, was kept in a perpetual irritation and ſtruggle, in a ſtate of aſthmatic conſtriction at all times, and in a ſtate of abſolute ſtrangulation upon the ſlighteſt attempt to ſwallow. The effects of every attempt to take down food or drink may be eaſily imagined, from the relation of the parts; for, firſt, the glottis and epiglottis, the parts which ſhould be in perpetual motion to prevent accidents in ſwallowing, were ſtiffened by ulceration and thickening: ſecondly, the opening of the pharynx into the œſophagus by which the food ſhould deſcend into the ſtomach, was diſtorted and obſtructed, both by the preſſure of the abſceſs behind, and by the cartilaginous part of the trachea, the larynx, being drawn continually backwards by the ſtylo-hyoidæi muſcles, in the inceſſant ſpaſms of the whole throat: third, the valve-like openings of the abſceſs or abſceſſes, (for abſceſſes appeared during life to occupy both ſides of the jaws and throat,) preſented themſelves more directly than the openings of the œſophagus, receiving every morſel of food or drop of fluid. The mechaniſm of the throat was ſo changed, that the more violently the efforts to ſwallow food or nouriſhment were excited, the more effectually was the purpoſe defeated, for, when the whole force of the throat, tongue, and muſcles of deglutition was exerted to force down the morſel, the œſophagus received not a particle of what was deſtined for the ſtomach, the whole force therefore of the muſcles of deglutition was ſpent in injecting the ſac of the abſceſs with the food or drink. The ſac, large and capacious as it was, ſoon filled; and no ſooner filled, than it effectually compreſſed the œſophagus; the

the food or drink then ran over into the trachea, and, by the effort which this inſtantly excited, the contents of the bag along with the laſt mouthful of the fluid, were rejected through the noſe. It was in this condition, in this laſt ſtage of his malady, that I ſaw this wretched man: he was meagre and ſtaring with famine, his belly clang to his back, his ſkin to his bones, his face was ſqualid, lean, and yellow, his voice hollow and rattling, his grey eyes ſunk in their ſockets, the eyelids and ſkin of the forehead raiſed and wrinkled in deep furrows: whenever he moved he was in danger of ſuffocation: the ſlighteſt attempt to ſwallow was accompanied with a ſtruggle which he ſeemed hardly capable of ſurviving: his ſkinny hands and ſprawling lean fingers, were perpetually extended before him, as if ready to catch at ſomething for ſupport, when the ſtrangulation came upon him: he had neither ſtrength nor voice, to tell me the date nor the cauſe of his ſufferings, and, though the abſceſſes on each ſide of his jaws extending along the neck, varying in their ſtate of fulneſs, and bulging upon every attempt to ſwallow, explained his condition in part, yet in honeſt truth I miſtook, at firſt, the ſlit-like opening (h) for the way into the œſophagus, till I found that, in place of admitting the lithotomy ſtaff which I uſed as a probe, to paſs downwards into the pharynx, it only entered when turned with the point upwards towards the noſtril. Satisfied and inſtructed in this point, and knowing part of the diſorder, viz. that the arches of the palate had cloſed and adhered, I ſought the paſſage downwards, and having paſſed the flexible catheter into the œſophagus, I poured down by the ſyringe a baſon of warm beef-tea, the firſt meal he had enjoyed for a long while, and which he acknowledged to be very grateful. But neither this firſt operation, nor any ſubſequent one was eaſy; I knew nothing preciſely concerning the ulcerated openings leading into the the ſac; often when the catheter ſeemed to paſs into the œſophagus, it plumped into the ſac, its point was reſiſted, and it was only by its ſtopping ſhort thus, that I was aware of the tube having miſſed the pharynx; upon ſuch occaſions I withdrew it to try again for the true paſſage: the catheter was always paſſed two or three times, before it actually entered the œſophagus; it was only when it paſſed eaſily and quite down into the throat, that I durſt venture to pour in the ſoup; ſometimes it went into the opening of the larynx, and, though inſtantly withdrawn, excited ſuch a ſuffocation as was very alarming. I fear that the pupil to whom I entruſted the paſſing of the catheter, and the nouriſhment of the patient, had actually failed, and concealed his own awkwardneſs from me: I cannot but reflect with ſelf-reproach on my own remiſſneſs in not paſſing the catheter regu-

larly myſelf: but, I believe, this complicated diſorder was quite incurable; the poor man grew more ghaſtly in the viſage, and weaker every hour, and, while we were engaged in contriving how the ſac might be opened, or what ſhould be done, he expired on the fourth day."

I have now narrated much of what I have ſeen or done, in tumors of the head and throat, diſeaſes always dangerous in their tendency, by affecting reſpiration and deglutition, and in which we muſt often decline operating, from their roots being entangled with the great arteries and nerves. Often when I have ſeen a patient dying in a miſerable and lingering manner, I have wondered that no other means of extirpation has ever been propoſed, than that which the knife affords, nor any deſign invented, by which tumors might be forced to ſuppurate. To expreſs ſuch a thought implies that a ſcheme of this nature has preſented itſelf to my imagination, ſuch as, I think, may be ſucceſsful: it is ſo, but being yet untried I am bound to ſubmit the following ſuggeſtion to you with diffidence, and to mention it without much detail, and with becoming modeſty and reſerve.

Tumors refuſe to ſuppurate when their ſubſtance is peculiarly ſolid, diſeaſe having obliterated the cellular ſubſtance of the part: tumors alſo are difficult to extirpate; and often, in conſequence of a hurried, bloody, and imperfect diſſection, much of the diſeaſe is left behind, becauſe ſucceſſive inflammations have hardened or filled up the cellular ſubſtance which ſurrounds the gland, and conſolidated it as it were into one maſs with the ſurrounding ſkin and fleſh: but could we venture to inject the more ſolid tumors, ſo as to reſtore by moderate violence the cellular interſtices, among its integral parts; or could we ſurround and inſulate an apparently immoveable tumor from its manifold adheſions, by an injection which would purſue whatever remained of the tela celluloſa from cell to cell, we ſhould perhaps attain this deſirable end, of forcing the one ſpecies of tumor into a ſtate of ſuppuration, and diſengaging the other from the ſurrounding parts.

What is it peculiar in the texture of a tumor that prevents ſuppuration? what is the character which implies that it is capable of being reſolved? a ſtony hardneſs, and extreme ſpecific gravity, indicating that the cellular ſubſtance is quite obliterated, that there is no interſtitial ſubſtance to receive thoſe ſecretions, which are by time matured into pus: thence it is that in glands indurated to this degree, ſchirrous as they are named, vaſcular action being excited by a blow or fall, and accompanied or relieved by no ſecretion, occaſions only pain, ulceration, partial gangrene in each burſting part, and a thin and watery ichor, which is itſelf an animal poiſon. The

blow-pipe forced into any tumor would, by ſucceſſive attempts, form thoſe interſtices, and injecting the part with oily and camphorated ſolutions, would force ſuppuration in the diſeaſes of the ſalivary, or thyroid, or lymphatic glands, where no operation could be attempted; and, in tumors even of the mamma, it might be advantageous to diſengage the part by ſuch injections, as would throw all the ſurrounding cellular ſubſtance into ſuppuration, the part itſelf, incapable of ſuppuration, would thus be inſulated and might be turned out like a kernel from its huſk. Such ſpontaneous ſuppurations of the ſurrounding cellular ſubſtance, and ſuch happy deliveries from a deſperate diſeaſe, we have witneſſed many times; and what I have now propoſed, though not without many difficulties and objections, is too ſtrong in analogies not to be worthy of ſome degree of notice. I know not how any tumor could reſiſt this practice: what dangerous conſequences could enſue? none worſe than ſuch ſuppuration. Gangrene, or ſloughing, as it is called, when thus local, would be limited to the cellular ſubſtance and ſkin, and the operations of inflating or injecting a tumor for the purpoſe of ſuppurating or of unrooting it, could be conducted with ſuch prudence, and, being of the nature of an experiment, would be attempted by ſuch gentle degrees, as would ſave us from ſelf-reproach, or the miſery of doing harm where we intended good.

I have read ſomewhere of an expreſſion, which often returns upon my ear, "Examples are eloquent;" I have ever found them the moſt precious leſſons, and been at pains through all my life to record them with care and preciſion: our reaſoning on every profeſſional queſtion, and our proceedings in every new caſe, muſt be regulated by precedents, and I have laid before you ſuch examples, and deduced from them ſuch leſſons, as you will not deſpiſe, for they are the fruits of experience. Of all profeſſional queſtions that concerning the nature, tendency, and future conſequences of a tumor, ſeems to me the moſt ſolemn: the phyſician or ſurgeon may but too eaſily rid them themſelves of the importunity of a patient afflicted with a dangerous tumor, for if they will but pronounce any projected operation fatal, the patient will retire from public view, mourn over his helpleſs and miſerable ſtate in ſolitude, and die a willing martyr to their opinion, and to he too natural abhorrence of pain, and the fear of expiring at once from loſs of blood.

MEMOIR

ON THE

SURGICAL DISEASES OF THE POOR,

ADDRESSED TO

THE SURGEONS, CLERGY, AND HERITORS,

IN THE REMOTE PARTS OF THE COUNTRY.

I ADDRESS you on a ſubject which well deſerves the attention of the Public, and of thoſe eſpecially who are the natural guardians of the Peaſantry and labouring Order of Society. And as it is my purpoſe to devote a portion of every future day of my life to this kind of charity, I feel that I have a claim upon your attention, which I urge the more confidently, becauſe I plead in behalf of the Poor, of a deſcription of Poor, who, being afflicted with tumors and other ſurgical diſeaſes, can not feign a miſery which they do not feel, nor ſue for a charity of which they are unworthy: I claim this privilege in right of my Profeſſion, which is a liberal as well as a learned one, and there is no well diſpoſed member of it, who is not in the daily practice of giving his time and labour, medicine and charity, to many who become known to him only when aſſailed at once by poverty and diſeaſe.—Theſe irreſiſtible calls engage every benevolent member of our profeſſion in ſcenes of diſtreſs, where he ſees, what is I fear unknown to the Public, how many of the lower claſſes of ſociety die of diſeaſes which a little charitable care, a little timely help, and a juſt forbearance with the prejudices of uneducated men, might prevent.

There are many natural cauſes to account for the moſt unſightly and loathſome diſeaſes being found chiefly among the lower orders. Scrophula, the prevailing diſeaſe of our cold moiſt climate, affects the glands, the bones, and the joints;—the peaſantry, eſpecially in the higher parts of the country, are ill fed, and always expoſed to the inclemencies of the weather;—and workmen of every deſcription are ſubject to falls, blows, and ſtrains in labour; and often a ſlight expoſure to cold, or an unuſual ſtrain in labour, lays the beginnings of an incurable and fatal diſeaſe.

Indeed every ſuch diſeaſe is incurable in this rank of life: even the ſlighteſt injury, or the moſt trivial tumor is dangerous to the poor man, who has no time of reſt, no remiſſion of labour to favour the cure;—a joint bruiſed, a bone injured though not broken, a gland ſwelled from cold, or an artery weakened in its coats by ſome ſudden ſtrain, grows by long neglect and frequent injuries, to be a tumor of the moſt ſhocking aſpect.

Yet theſe diſeaſes have their beginnings in ſeemingly trivial tumors, which timely care and confinement might prevent, or which might be cured at firſt by almoſt bloodleſs operations. The tumor which ſeems but a ſlight deformity, void of pain, or accompanied with ſuch pain only as is but ſlightly heeded by a poor man, inured to continual labour, comes in the end to interrupt the breathing, to affect the ſwallowing, to diſturb or impede the circulation of the limb, or to preſs upon the vital organs, or extends to ſuch a degree that blood ſuddenly burſts from the diſeaſed veſſels, ulceration and cancer enſue, and a man in the prime and vigour of life, inſenſible to the beginnings and ſlow progreſs of his diſeaſe, is brought to an untimely and painful death. To the Poor misfortune never comes ſingle, their diſeaſes, by neglect and poverty, aſſume ſuch horrid forms as are almoſt unknown in the higher ranks of life, and call for ſympathy and charity;—ſympathy with their ſufferings, and charity even for thoſe prejudices by which they are cauſed.

The vulgar are inſenſible to every leſſer pain, indifferent to every ſlight deformity, unconſcious of remote conſequences, and full of prejudices againſt our profeſſion; and, as it requires an effort of the imagination, and a cultivated reaſon to conceive diſtant dangers, it is often in vain that you endeavour to explain the future conſequences of diſeaſe to thoſe in the lower ranks of life. Thence it comes to paſs, that ſwellings and tumors, of the bones, of the joints, of the breaſt, of the glands ſurrounding the jaws and throat, of the axilla or groin, are ſuffered to grow uncontrolled to an enormous ſize, only becauſe unattended in the earlier ſtage of the diſeaſe with ulceration or pain. But diſabled at laſt, the unhappy creatures decline into poverty, become objects of charity, and nouriſh theſe tumors which are to cauſe their death, as the preſent means of gaining their bread. The Public knows not of the many who withdraw themſelves from the eye of every fellow-creature and expire in miſery; and yet ſuch loathſome ſpectacles are exhibited in our lanes and public ſtreets as diſgrace no other civilized country, ſo that foreigners are heard to expreſs their concern and pity.

To us it muſt be a matter of deep concern to remove this reproach, and to ſave from extreme miſery numbers of the induſtrious and labouring claſs of ſociety, who are brought to poverty only through diſeaſe, and are blameleſs in every thing but thoſe prejudices by which they are prevented from ſeeking timely help. An Infirmary is the laſt and deſperate reſource of the Poor, and the caſes which excite the deepeſt intereſt in any ſuch public inſtitution, are neglected diſeaſes, beyond the reach of ſurgery; tumors which oppreſs the breathing or ſwallowing, but which are connected too cloſely with the great veſſels to admit of operation, indurations of the ſalivary glands of ſuch enormous magnitude as to protrude the tongue, obſtruct the breathing, and deſtroy the jaw-bones by their preſſure, ſwellings of the bones ſo great, and advancing ſo cloſe to the trunk of the body, as not to admit of amputation, the laſt and deſperate reſource; polypi obſtructing the throat and noſtrils, and bloody tumors, accompanied with ſuch hemorrhages as no means can prevent or moderate; tumors of the extremities, which, though local at firſt, and eaſily extirpated, have extended along the whole limb, and reached the body, and acquired ſuch a connection with the great veſſels and nerves as to render any ſurgical experiment too critical for a prudent man to attempt. Cancerous, and aneuriſmal, and even loupy tumors, the moſt ſimple and unoffending of all, often end in death, and while, from their enormous ſize, and fatal conſequences, they excite a moſt natural intereſt in the beholders, while the ſtudent has the privilege of looking upon the ſufferings of the dying patient, and witneſſing the devaſtation which a tumor never fails in its later ſtages to produce, while the recorded caſes of this nature ſerve to demonſtrate how the parts of the body may be changed, and what the human conſtitution will endure, and ſerve to explain by analogy the incipient and curable degrees of diſeaſe; ſtill it muſt be acknowledged, that the very exiſtence of ſuch neglected diſeaſes is proof unqueſtionable, that ſomething is yet wanting for the relief of the Poor.

An hoſpital is the laſt reſort of thoſe who moſt need ſuch charity. In the firſt period of diſeaſe, while the injury is recent, and the remedy eaſy and ſure, in that period moſt favourable to recovery, the poor man has no prudent friend to impreſs him with a ſenſe of danger, to admoniſh him of the ill conſequences of delay. In the next degree, when he is diſabled from work and diſtracted with pain, and the ſenſe of increaſing poverty alarms him, ſtill his condition is not ſo diſpiriting as to make him throw himſelf upon the public charity, and enter in that Hoſpital aganſt

which his prejudices have grown up from his very childhood. During all the progreſs of his diſeaſe, the poor man looks forward to what may be his future lot: the worſt he fears is to be thrown into a Hoſpital, and he balances his preſent danger with the ſhame, the unhappineſs, the pains of a public operation, the agony of being expoſed before numbers of ſpectators, and lingers on in doubt and fear, till, at laſt, even the ſacrifice of theſe natural and juſt feelings can no longer avail: bereft by dreadful ſufferings of every domeſtic comfort, become a burthen on his friends, he is at length conveyed to a Hoſpital, when too late to receive relief, his caſe only becoming an object of importance as a recorded inſtance and fatal warning of the incurable ſtage of his malady, or an example to ſtudents, of a deſperate and unavailing operation.

Let us reflect humanely and patiently on the prejudices of the poor:—we condemn them as irrational becauſe we witneſs their fatal effects, yet they are ſuch, I believe, as the beſt and wiſeſt of us, in like circumſtances, would not diſavow. It is not alone becauſe of the diſgrace, that the poor man goes into an Hoſpital with reluctance, nor from the fear of committing himſelf into the hands of young and inexperienced Surgeons, whoſe names, conduct, or ſkill are all unknown to him; it is not the fear of ſubmitting himſelf to rules with which he is made acquainted too late to refuſe his aſſent, of being ſeparated from his friends, when he moſt needs their kindneſs, of reſigning in ſome degree his natural will, and the privilege of judging for himſelf: but, he knows that an Infirmary is a place of public and general charity, in which are received patients of every deſcription, with fluxes, fevers, eryſipilas, eruptive diſeaſes, and various maladies, which cannot but be regarded as ſources of infection, by which the moſt ſimple ſurgical malady or trivial ſore may be rendered dangerous, and which are certainly unfavourable to one who has to undergo any great operation. Every ſeaſon there are febrile diſeaſes which ſeize indiſcriminately all the ſores of an Hoſpital, and are very fatal to thoſe who have undergone operations; we know not as yet to what cauſe theſe ſhould be imputed, but this we know, that, while all the ſores and inciſions, and amputated ſtumps of patients lying in an Hoſpital, are ſeized with gangrene, no ſuch diſeaſe aſſails thoſe even of the Poor who have ſuffered operations in private, though ill-accommodated, and breathing ſeemingly a leſs ſalubrious air. A labouring man arriving from the peaceful ſcene, and wholeſome air of the village in which he has lived and laboured, would, independent of any diſeaſe, find his health endangered by the noiſe, the confuſion,

the confinement, and noxious air of an Hoſpital, and, it is eaſy to imagine, what agonies of mind he muſt ſuffer, who hears the cries of thoſe under that operation which he is preparing to undergo, and ſees his fellow-ſufferer conveyed to that ſcene of trial, or carried back in ſolemnity and ſilence to his bed, there to wait the iſſue, life or death; he may hear his dying groans, he muſt be informed of what he has ſuffered as related by nurſes and other attendants; and ſcenes like theſe once paſſed through, muſt be a ſubject of converſation and deep intereſt among thoſe of the lower ranks of life, who are the moſt liable to become patients. The poor man has heard too, that an Infirmary is not a ſimple charity, that it is not founded ſolely for him and ſuch as him, that it is reputed a ſchool of experiments, and not much famed for ſucceſsful operations: he knows that when he goes there, his ſores and his ſufferings muſt be expoſed to hundreds of ſpectators, and he believes, in his ignorance, that even his remains would not be reſpected, ſhould he die. Can we blame prejudices ſo natural, or wonder that the poor man who has no other aſylum lingers irreſolute till his caſe is hopeleſs?

Theſe are circumſtances in which the efforts of one individual of acknowledged ſkill, the pledged and proffered ſervices of one in whoſe humanity and talents the lower people may confide, may be a bleſſing to the poor over all the country. The poor man who knows of no reſource but that which he regards as diſgraceful, who, beſides the doubts of committing himſelf to ſurgeons whoſe very names he does not know, fears that he will forfeit by going into an hoſpital the natural right of deciding for himſelf, and who is ſenſible that his perſon and his ſufferings will be equally expoſed to ſtrangers,—would moſt gladly ſeek advice of any private man of reputation who were likely to reſpect his afflicted condition, and treat his prejudices and his malady with the ſame humane and tender concern that he would the maladies of thoſe who can by their riches command aſſiſtance. By applying early for advice, the number of ſlight but timely operations would be augmented, and the examples of deſperate diſeaſes would decreaſe: the gland which would have grown to ſuch a bulk as to endanger ſuffocation, the tumor which would have burſt into ulceration, the hernia which would have terminated in gangrene, the diſeaſed veſſels, which, by a few years of growth, would have dilated, and poured out blood ſo profuſely as to have brought the patient to his grave, might thus, by prudent council and timely interpoſition, be prevented from becoming fatal: there can be no greater charity, than to beſpeak the confidence of the poor, and give them a regular claim to advice by offering it. There are beſides, various caſes in which the coun-

try ſurgeon is honeſtly doubtful of his own opinion, and has no one to aſſiſt him in his conſultations; many, where the operation which he deliberately approves of, and would moſt willingly perform, is yet too full of danger to be attempted on his own mere authority; often he is deterred by the clamours of relations, the jealouſy of rivals, or the prejudices of the well-meaning but ignorant neighbours; and often he perceives it to be too much to attempt a critical operation, ill appointed as he often is with inſtruments or apparatus, and unaſſiſted. Theſe then are to be added to the innumerable cauſes which bring people dying of incurable diſeaſes to the capital of the country.

I ſhould not dare to publiſh this ſhort memoir, did I not publiſh at the ſame moment a volume on theſe very ſubjects, full of drawings and narratives of ſuch diſorders grown deſperate by delay, and requiring operations proportionately deſperate; nor ſhould I preſume to deſcribe thus the imperfections of our inſtitutions and the ſufferings of the poor, had I not made their diſeaſes, and the means of relieving them, the ſtudy and buſineſs of my life. I know by experience to what extent theſe duties muſt, when I thus avowedly undertake them, occupy my hours, and fill my mind; but I alſo know how little they need interrupt more neceſſary, or rather more ſelfiſh duties: for during the moſt anxious periods of my lecturing, I never failed to note down every remarkable caſe in the Royal Infirmary, and take the drawings with my own hand; and ſince then I have, in the buſieſt moments of my practice, drawn anatomical plans of every operation I have performed, and written every caſe with diligence, finding always an hour to devote to this favourite purſuit. This is the courſe of ſtudy and practice which makes every ordinary duty ſit lighter on the mind, and enables me to calculate every claim on my time, and to fulfil every duty with alacrity. "The duty we delight in phyſics pain." Practice thus diligently purſued is true experience; and the improvement I have derived in all times from my attention to the poor ſhould be repaid where it muſt be ſo uſeful, where it is ſo juſtly due. Theſe charities form a continual ſource of improvement to the young men whoſe education is intruſted to my care; and I have ever endeavoured to teach them a humane and patient temper by leſſons of practice and examples of diligence. May I not acknowledge, that I ſtill am occupied with ſtudy, and deſire to improve? When that zeal expires, or is abſorbed in more ſelfiſh purſuits, a profeſſional man is of little value indeed to any rank of his fellow citizens.

By the following regulations I hope to extend, wherever they may be called for, thoſe humane and charitable offices to which, in common with my profeſſional brethren, I am bound by my oath of initiation. It needs no ſuch ſolemn conjuration to engage us in theſe duties; they are naturally our earlieſt occupation, and, according to the ſpirit in which they are performed, they become irkſome or pleaſing: they ſhould be, throughout the whole courſe of a profeſſional life, a ſource of continual improvement. In neglected caſes ſuch as I have now deſcribed, the phyſician ſees, as if magnified and made perceptible to every ſenſe, the diſorders of all the parts of the body; and by thoſe obvious alterations of ſtructure the natural functions of the body are explained, and the obſerver is taught to reaſon on the cauſes and dangerous tendency of ſuch changes as are imperceptible and unthought of when diſeaſe begins. In our ſcience, as in every other, a young man having proceeded from the ſchools no other way qualified for practice than by knowing general rules and theories, ſoon perceives, that all he can do or imagine for the cure of diſeaſe, all his ſureſt reaſonings and moſt effectual operations, are founded on a knowledge of precedents, and particular facts, obſerved or recorded.

1ſt. I ſhall reſerve one hour, that, viz. from three to four o'clock, daily, for receiving the poor, examining their complaints, and giving orders concerning thoſe who have arrived from a diſtance, and at all hours there ſhall be ſome one ready to receive them.

2d. The firſt interview is that in which I give general directions for their accommodations, treatment, or attendance. I ſhall then appoint another for deliberately enquiring into their condition, regiſtering their caſes, hearing their own narrative, or reading whatever letters they bring; and I ſhall invariably deliver a ſummary opinion to the clergyman, or heritor, by whom the patient is ſent to my care, or a detailed opinion to the ſurgeon of his native place. If an operation is adviſeable, it ſhall be performed; if the patient returns, he ſhall return with a full opinion on the difficulties which have diſcouraged me from attempting his cure.

3d. Should I judge it right to perform any operation, I ſhall intimate that deſign to the ſurgeon who has firſt had the care of the patient, and ſhall perform it with my own hand; I ſhall provide every thing for the operation, give the patients wine and medicines gratis, and appoint ſteady and ſenſible young men to attend and dreſs them, and ſhall myſelf ſee every duty faithfully performed.

4th. There are few even of the poor ſo helpleſs or unprotected, as not to have ſome ſlender means of ſubſiſtence allowed them, perhaps by their maſters or friends. Should they be but a little above abſolute poverty, I ſhall aſſiſt in providing for thoſe who have to undergo any great operation, as lithotomy, amputation, the extirpation of any remarkable tumor, the cancerous breaſt, &c.; and I know that a little will ſerve to place them in a reſpectable lodging, and comparative luxury: I know by experience how ſlight a charge it would be to receive and protect all the poor who come to the metropolis, to ſuffer the more important ſurgical operations: for it is the loungers, and thoſe deformed with eruptive ſores and ulcerated limbs that occupy the otherwiſe empty wards of an hoſpital, and abuſe the public charity—loungers who keep their poſts for months, and when diſmiſſed, return again under the ſlighteſt preſſure, not of diſeaſes but of circumſtances. Thoſe ſuffering operations are comparatively few, and for them a few ſhillings a week will procure a neat and commodious lodging, among quiet and worthy people, and in a wholeſome air, attended by their friends; one or two bottles of wine will ſerve every right and uſeful purpoſe; and a ſick-bed and the period of recovering from an operation is no time for enjoying luxuries, except the indiſcribable luxury of tranquillity and ſilence, while the moſt ſimple food alone is acceptable or allowable.

It has been my conſtant practice to aſſiſt, and often entirely to ſupport the poor; and having, on occaſion of any great operation, ſet apart a ſmall ſum, ſeldom exceeding two guineas, never amounting to three, I have found it ſo diſcretely and œconomically uſed by my pupils, for the behoof of the patient, that before it was expended he was well, and preparing for his journey home. Whatever pittance of charity is ſent with a poor patient, I ſhall ſee adminiſtered faithfully for his comfort.

5th. The time which theſe arrangements require is not devoted ſolely to the poor: it is that portion of time which I have appropriated to the continually improvement of my mind and talents, in judging and operating. It has been my cuſtom to make every drawing, narrative, and plan for operating with my own hand. The Caſes of former years are regiſtered in many volumes, ſo that when I write on profeſſional matters I write not conjectures, but experiments, facts, and precedents. Thoſe of future years will be compiled ſurely with no leſs care, and ſhall be publiſhed annually in a ſmall octavo volume, accompanied with drawings, and

ſuch ſelections from my former caſe books as may contribute to illuſtrate each new phenomenon, or rule of practice. I ſhall alſo publiſh in that work whatever uſeful or ſingular caſes are communicated by other ſurgeons *.

There are certain ſympathies which the affluent ſhould be called upon to feel in the midſt of the comforts and luxuries they enjoy, the leaſt part of which might ſerve to alleviate much miſery, if not to remove all that is not inſeparable from human nature; and in no deſcription of men is it more becoming to urge theſe claims, than in men of our profeſſion, who ſee all forms of ſuffering, and know the true objects of charity. It would be eaſy to prove, that a very little charity, judiciouſly beſtowed, would equalize the comforts of all ranks, and make the poor almoſt as independent as the rich in the moſt trying moments, when the proſpect of a painful and uncertain operation is embittered by poverty. This would be at once accompliſhed were thoſe of higher rank, when they are to undergo an operation, to allow a pittance to thoſe who are to ſuffer the ſame pains and dangers, in poverty and helpleſſneſs.

6th. While I ſhall neglect no perſon in diſtreſs, I ſhall particularly charge myſelf with thoſe who have their caſes atteſted by the ſurgeon of their native place, as requiring particular advice, or a doubtful and dangerous operation; and of thoſe who are certified by their clergyman to be good and worthy people, deſerving protection and aſſiſtance: but there may alſo be many who feel a poverty which their appearance does not betray, nor the honeſt pride allow them to acknowledge. I require but the ſlighteſt intimation to uſe every delicacy towards ſuch patients, and prevent every painful feeling.

My partner, Mr. Allan, who has been long privy to my intentions, ſubſcribes with pleaſure to every obligation I hereby take upon me: he has long aſſiſted me in my operations and will be careful of thoſe people, when at any time accidents, or needful relaxation call me from my charge.

The active period of man's life, betwixt the acquiſition and the uſe of knowledge, is limited to a very narrow ſpace; and purpoſes ſuch as I now announce ſhould not be delayed; but I have refrained from this public declaration only till years

* I very earneſtly requeſt every profeſſional Gentleman, who wiſhes to have any obſervation publiſhed in my Annual Volume of Conſultations, that he will, when the diceaſe has proved fatal, ſend me the preparation, that drawings may be made for his Caſes, as for my own.

and experience have given me ſome authority: until my firſt volume of Conſultations was laid before my profeſſion and the public, as a proof how capable I am of perſeverance in theſe arduous duties, and of the zealous manner in which I have ever fulfilled them: until my proffered aſſiſtance became an act of real unequivocal charity towards the poor. I now moſt willingly take a ſtep which I can never retract, and bind myſelf, when time is becoming more precious and gainful, to taſks which muſt entail upon me many irkſome moments, and involve me deep in ſcenes of diſtreſs: but I am confident that by my profeſſional help I ſhall be able to do much for the relief of many a poor man, at this moment, perhaps, afraid to enter into an hoſpital, and doubtful where or how to apply for help, a little above poverty, and yet unable to give fees proportioned to the danger of his condition. Having once conceived this deſign, and felt all its importance to my immediate pupils, to the public, to my own improvement, and to the ſcience which by my writings I profeſs to teach, as well as practice, I ſhould forever condemn myſelf, were I to fear any degree of anxiety or toil in ſo worthy an occupation.

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